

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: July 15, 2004, 16:25:44 ; Search time 78.3582 Seconds
(without alignments)
540.877 Million cell updates/sec

Title: US-09-423-100-7
Perfect score: 797
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....IVEQCCTSICSLYQLENYCN 150

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_29Jan04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	% Query		Match	Length	DB	ID	Description
	Score	Match					
1	797	100.0	150	2	AA42861	Aay42861	Chimeric
2	555.5	69.7	107	2	AA42860	Aay42860	hGH-mini-
3	470	59.0	92	2	AA42856	Aay42856	Human gro
4	470	59.0	134	2	AA92265	Aaw92265	Human ant
5	470	59.0	191	5	AB94861	Abg94861	Human gro
6	466	58.5	192	1	AA90129	Aap90129	Human gro
7	466	58.5	192	2	AA92264	Aaw92264	Human ant
8	465	58.3	140	1	AA91041	Aap91041	Human gro
9	465	58.3	261	1	AA91299	Aap91299	Human ner

10	465	58.3	262	2	AAR11740	Aar11740	Human	gro
11	465	58.3	310	2	AAR03255	Aar03255	Fusion	pr
12	464	58.2	191	5	ABG31862	Abg31862	Mature	hu
13	463	58.1	191	5	ABG94860	Abg94860	Human	gro
14	463	58.1	191	5	ABG94977	Abg94977	Human	gro
15	462	58.0	144	2	AAR05313	Aar05313	Segment	o
16	462	58.0	191	5	ABG94975	Abg94975	Human	gro
17	462	58.0	191	5	ABG94976	Abg94976	Human	gro
18	462	58.0	262	1	AAP61033	Aap61033	Human	bet
19	461	57.8	191	2	AAO20110	Aao20110	Protein	s
20	461	57.8	191	2	AAY04396	Aay04396	Natural	h
21	461	57.8	191	3	AAY78425	Aay78425	Human	gro
22	461	57.8	191	4	AAO17485	Aao17485	Human	gro
23	461	57.8	191	4	AAO17486	Aao17486	Human	gro
24	461	57.8	191	5	ABG31865	Abg31865	Mature	hu
25	461	57.8	191	5	ABG31863	Abg31863	Mature	hu
26	461	57.8	191	5	ABG31860	Abg31860	Mature	hu
27	461	57.8	191	5	ABG31866	Abg31866	Mature	hu
28	461	57.8	191	5	ABG31857	Abg31857	Mature	hu
29	461	57.8	191	5	ABG31861	Abg31861	Mature	hu
30	461	57.8	191	5	ABG94932	Abg94932	Human	gro
31	461	57.8	191	5	ABG94967	Abg94967	Human	gro
32	461	57.8	191	5	ABG94925	Abg94925	Human	gro
33	461	57.8	191	5	ABG94933	Abg94933	Human	gro
34	461	57.8	191	5	ABG94940	Abg94940	Human	gro
35	461	57.8	191	5	ABG94964	Abg94964	Human	gro
36	461	57.8	191	5	ABG94912	Abg94912	Human	gro
37	461	57.8	191	5	ABG94919	Abg94919	Human	gro
38	461	57.8	191	5	ABG94863	Abg94863	Human	gro
39	461	57.8	191	5	ABG94910	Abg94910	Human	gro
40	461	57.8	191	5	ABG94920	Abg94920	Human	gro
41	461	57.8	191	5	ABG94923	Abg94923	Human	gro
42	461	57.8	191	5	ABG94939	Abg94939	Human	gro
43	461	57.8	191	5	ABG94978	Abg94978	Human	gro
44	461	57.8	191	5	ABG94913	Abg94913	Human	gro
45	461	57.8	191	5	ABG94924	Abg94924	Human	gro

ALIGNMENTS

RESULT 1

AAY42861

ID AAY42861 standard; protein; 150 AA.

XX

AC AAY42861;

XX

DT 19-JAN-2000 (first entry)

XX

DE Chimeric protein, SEQ ID 7.

XX

KW Insulin; precursor; growth hormone; chaperone; intramolecular; folding;
KW conformation; chimeric protein; cleavable; recombinant; production;
KW yield.

XX

OS Synthetic.

OS Homo sapiens.

XX
 PN WO9950302-A1.
 XX
 PD 07-OCT-1999.
 XX
 PF 31-MAR-1998; 98WO-CN000052.
 XX
 PR 31-MAR-1998; 98WO-CN000052.
 XX
 PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.
 XX
 PI Gan Z;
 XX
 DR WPI; 1999-610839/52.
 XX
 PT New chimeric proteins containing human growth hormone fragment, used
 PT particularly for the production of human insulin.
 XX
 PS Claim 14; Page 30-31; 46pp; English.
 XX
 CC This sequence represents a chimeric protein, which contains an N-terminal
 CC fragment of human growth hormone (hGH) of the sequence given in AAY42856,
 CC a cleavable peptide linker (AAY42857), and a human insulin precursor
 CC comprising insulin A and B chains (AAY42859). The hGH portion of the
 CC chimeric protein acts as an intramolecular chaperone (IMC) for the
 CC insulin precursor, enabling it to fold correctly. The cleavable peptide
 CC linker has a C-terminal Arg residue which enables the hGH portion of the
 CC chimeric protein to be removed after folding has taken place. Production
 CC of recombinant human insulin via an hGH-proinsulin chimeric protein can
 CC provide human insulin with correctly linked cysteine bridges with fewer
 CC necessary procedural steps, and hence resulting in a higher yield of
 CC human insulin. The IMC sequences not only protect insulin sequences from
 CC intracellular degradation by a microorganism host, but also promote the
 CC folding of the fused insulin precursor, facilitate the solubility of the
 CC fusion protein and decrease the intermolecular interactions among the
 CC fusion proteins, thus allowing folding of the fused insulin precursor at
 CC commercially useful high concentrations. The procedural steps of cyanogen
 CC bromide cleavage, oxidative sulphytolysis and related purification steps
 CC can thus be eliminated, along with the use of high concentrations of
 CC mercaptan or the use of hydrophobic absorbent resins
 XX
 SQ Sequence 150 AA;

Query Match 100.0%; Score 797; DB 2; Length 150;
 Best Local Similarity 100.0%; Pred. No. 1.1e-45;
 Matches 150; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60
 Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGSHLVEALYLVCGER 120
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGSHLVEALYLVCGER 120
 Qy 121 GFFYTPKTRGIVEQCCTSICSLYQLENYCN 150
 ||||||||||||||||||||||||||||||||||||

RESULT 2

AAY42860

ID AAY42860 standard; protein; 107 AA.

XX

AC AAY42860;

XX

DT 19-JAN-2000 (first entry)

XX

DE hGH-mini-proinsulin chimeric protein.

XX

KW Insulin; precursor; growth hormone; chaperone; intramolecular; folding;

KW conformation; chimeric protein; cleavable; recombinant; production;

KW yield.

XX

OS Synthetic.

OS Homo sapiens.

XX

PN WO9950302-A1.

XX

PD 07-OCT-1999.

XX

PF 31-MAR-1998; 98WO-CN000052.

XX

PR 31-MAR-1998; 98WO-CN000052.

XX

PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.

XX

PI Gan Z;

XX

DR WPI; 1999-610839/52.

XX

PT New chimeric proteins containing human growth hormone fragment, used particularly for the production of human insulin.

XX

PS Claim 13; Page 30; 46pp; English.

XX

CC This sequence represents a chimeric protein, hGH-mini-proinsulin. This
 CC chimeric protein contains an N-terminal fragment of human growth hormone
 CC (hGH) of the sequence given in AAY42855, a cleavable peptide linker
 CC (AAY42857), and a human insulin precursor comprising insulin A and B
 CC chains (AAY42859). The hGH portion of the chimeric protein acts as an
 CC intramolecular chaperone (IMC) for the insulin precursor, enabling it to
 CC fold correctly. The cleavable peptide linker has a C-terminal Arg residue
 CC which enables the hGH portion of the chimeric protein to be removed after
 CC folding has taken place. Production of recombinant human insulin via an
 CC hGH-proinsulin chimeric protein can provide human insulin with correctly
 CC linked cysteine bridges with fewer necessary procedural steps, and hence
 CC resulting in a higher yield of human insulin. The IMC sequences not only
 CC protect insulin sequences from intracellular degradation by a
 CC microorganism host, but also promote the folding of the fused insulin
 CC precursor, facilitate the solubility of the fusion protein and decrease
 CC the intermolecular interactions among the fusion proteins, thus allowing
 CC folding of the fused insulin precursor at commercially useful high
 CC concentrations. The procedural steps of cyanogen bromide cleavage,

CC oxidative sulphitolysis and related purification steps can thus be
CC eliminated, along with the use of high concentrations of mercaptan or the
CC use of hydrophobic absorbent resins
XX
SQ Sequence 107 AA;

Query Match 69.7%; Score 555.5; DB 2; Length 107;
Best Local Similarity 71.3%; Pred. No. 8.3e-30;
Matches 107; Conservative 0; Mismatches 0; Indels 43; Gaps 1;

```
Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
      ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNP----- 49

Qy     61 TPSNREETQQKSNLELLLRISLLLIQSWLEPVQLGTGPRFVNQHLCGSHLVEALYLVCGER 120
      ||||||||||||||||||||||||||||||||||||||||
Db     50 -----LGTGPRFVNQHLCGSHLVEALYLVCGER 77

Qy    121 GFFYTPKTRGIVEQCCTSICSLYQLENYCN 150
      ||||||||||||||||||||||||||||
Db     78 GFFYTPKTRGIVEQCCTSICSLYQLENYCN 107
```

RESULT 3

AA42856

ID AAY42856 standard; protein; 92 AA.

XX

AC AAY42856;

XX

DT 19-JAN-2000 (first entry)

XX

DE Human growth hormone (hGH) N-terminal fragment #2.

XX

KW Growth hormone; chaperone; intramolecular; insulin; precursor; folding;
KW conformation; chimeric protein; cleavable; recombinant; production;
KW yield.

XX

OS Homo sapiens.

XX

PN WO9950302-A1.

XX

PD 07-OCT-1999.

XX

PF 31-MAR-1998; 98WO-CN000052.

XX

PR 31-MAR-1998; 98WO-CN000052.

XX

PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.

XX

PI Gan Z;

XX

DR WPI; 1999-610839/52.

XX

PT New chimeric proteins containing human growth hormone fragment, used
PT particularly for the production of human insulin.

XX

PS Claim 5; Page 28; 46pp; English.

XX
 CC This sequence represents an N-terminal fragment of human growth hormone
 CC (hGH) which is a component of a chimeric protein (AAY42861) which also
 CC contains a human insulin precursor (AAY42859). The hGH portion of the
 CC chimeric protein acts as an intramolecular chaperone (IMC) for the
 CC insulin precursor, enabling it to fold correctly. A cleavable peptide
 CC linker with a C-terminal Arg residue (AAY42857) enables the hGH portion
 CC of the chimeric protein to be removed after folding has taken place.
 CC Production of recombinant human insulin via an hGH-proinsulin chimeric
 CC protein can provide human insulin with correctly linked cysteine bridges
 CC with fewer necessary procedural steps, and hence resulting in a higher
 CC yield of human insulin. The IMC sequences not only protect insulin
 CC sequences from intracellular degradation by a microorganism host, but
 CC also promote the folding of the fused insulin precursor, facilitate the
 CC solubility of the fusion protein and decrease the intermolecular
 CC interactions among the fusion proteins, thus allowing folding of the
 CC fused insulin precursor at commercially useful high concentrations. The
 CC procedural steps of cyanogen bromide cleavage, oxidative sulphytolysis
 CC and related purification steps can thus be eliminated, along with the use
 CC of high concentrations of mercaptan or the use of hydrophobic absorbent
 CC resins

XX
 SQ Sequence 92 AA;

Query Match 59.0%; Score 470; DB 2; Length 92;
 Best Local Similarity 100.0%; Pred. No. 3.4e-24;
 Matches 92; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60
 Qy 61 TPSNREETQQKSNLELLRLISLLLIQSWLEPVQ 92
 ||||||||||||||||||||||||||||
 Db 61 TPSNREETQQKSNLELLRLISLLLIQSWLEPVQ 92

RESULT 4

AAW92265

ID AAW92265 standard; protein; 134 AA.

XX

AC AAW92265;

XX

DT 08-JUN-1999 (first entry)

XX

DE Human anti-angiogenic peptide 16K hGH Met-1Prol33.

XX

KW Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
 KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
 KW placental vascularisation; pregnancy; treatment; angiogenic disease;
 KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
 KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
 KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
 KW granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
 KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
 KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
 KW gene therapy; pre-eclampsia; intrauterine growth retardation;

KW placental dysfunction.
 XX
 OS Homo sapiens.
 XX
 PN WO9851323-A1.
 XX
 PD 19-NOV-1998.
 XX
 PF 12-MAY-1998; 98WO-US009691.
 XX
 PR 13-MAY-1997; 97US-0046394P.
 XX
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Weiner RI, Martial JA, Struman I, Taylor R;
 XX
 DR WPI; 1999-045192/04.
 DR N-PSDB; AAX01707.
 XX
 PT New anti-angiogenic peptides - comprise N-terminal fragments of human
 PT placental lactogen, human growth hormone, growth hormone variant or human
 PT prolactin.
 XX
 PS Claim 4; Page 49-50; 87pp; English.
 XX
 CC This invention describes novel human anti-angiogenic peptides derived
 CC from 10 to 150 consecutive amino acids selected from the N-terminal end
 CC of human placental lactogen (hPL), human growth hormone (hGH), growth
 CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
 CC capillary endothelial cell proliferation and organisation (ii) inhibit
 CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
 CC least one specific receptor which does not bind an intact full length
 CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
 CC diagnosing a probable abnormality of placental vascularisation during
 CC pregnancy. The peptides can be used for treating an angiogenic disease in
 CC a subject, for inhibiting tumour formation or growth in a patient or for
 CC modulating vascularisation of a patient's placenta. In particular, the
 CC peptides can be used for preventing or treating e.g. malignant tumours,
 CC angiofibroma, arteriovenous malformation, arthritic such as rheumatoid
 CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
 CC delayed wound healing, proliferative retinopathy such as diabetic
 CC retinopathy, macular degeneration, granulations such as those occurring
 CC in haemophilic joints, inappropriate vascularisation in wound healing
 CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
 CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
 CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
 CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
 CC leukaemia, and reproductive disorders such as follicular and luteal cysts
 CC and choriocarcinoma. They can also be used as contraceptive agents. DNA
 CC encoding the peptides can be used in gene therapy. The measurement of
 CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
 CC can be used in assays for impairment of vascular development associated
 CC with pre-eclampsia, intrauterine growth retardation, and placental
 CC dysfunction
 XX
 SQ Sequence 134 AA;

Query Match 59.0%; Score 470; DB 2; Length 134;
Best Local Similarity 100.0%; Pred. No. 4.6e-24;
Matches 92; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60

Qy     61 TPSNREETQQKSNLELLLRISLLLIQSWLEPVQ 92
          ||||||||||||||||||
Db     61 TPSNREETQQKSNLELLLRISLLLIQSWLEPVQ 92
```

RESULT 5

ABG94861

ID ABG94861 standard; protein; 191 AA.

XX

AC ABG94861;

XX

DT 03-DEC-2002 (first entry)

XX

DE Human growth hormone mutant hPRL (111-129).

XX

KW Growth hormone; placental lactogen; prolactin; active domain; hGH;
KW structure-function relationship; segment-substituted polypeptide; mutant;
KW mutein.

XX

OS Homo sapiens.

OS Synthetic.

XX

PN US6428954-B1.

XX

PD 06-AUG-2002.

XX

PF 06-JUN-1995; 95US-00483039.

XX

PR 28-OCT-1988; 88US-00264611.

PR 26-OCT-1989; 89US-00428066.

PR 27-APR-1992; 92US-00875204.

PR 13-OCT-1992; 92US-00960227.

PR 02-FEB-1994; 94US-00190723.

XX

PA (GETH) GENENTECH INC.

XX

PI Wells JA, Cunningham BC;

XX

DR WPI; 2002-696875/75.

XX

PT Identifying active domains within cloned polypeptides of known amino acid
PT sequence by substituting analog segments into the parent polypeptide is
PT useful to determine the relationship between structure and function.

XX

PS Example 1; Page; 86pp; English.

XX

CC The invention relates to identifying an unknown active domain in a region
CC of known amino acid sequence in a parent polypeptide e.g. human growth
CC hormone (hGH) which has been cloned and has a pre-identified biological

CC activity, where the active domain interacts with a target when the parent
 CC polypeptide is in its native-folded form and the interaction is
 CC responsible for the biological activity comprising: (a) comparing the
 CC amino acid sequence or polypeptide structure in the region of known amino
 CC acid sequence of hGH with the amino acid sequence or polypeptide
 CC structure in a region of known amino acid sequence of an analogue
 CC polypeptide (e.g. prolactin, placental lactogen or porcine growth
 CC hormone) which has at least 15% homology with hGH alpha-carbon
 CC coordinates within about 2-3.5 angstroms of hGH alpha-carbon coordinates
 CC for about 60% of the analogue sequence, where any interaction of the
 CC analogue with the target is different from target interaction with hGH;
 CC (b) substituting DNA encoding an analogous polypeptide segment from the
 CC analogue into DNA encoding the full length hGH, and expressing a segment-
 CC substituted polypeptide; (c) contacting the segment-substituted
 CC polypeptide with the target to determine interaction; (d) repeating steps
 CC (b) and (c) with a second analogous polypeptide segment; and (e)
 CC comparing the difference between activity of the first and second segment
 CC -substituted polypeptides as an indication of the location of the unknown
 CC active domain in hGH. The method is useful for determining the
 CC relationship between structure and function of known polypeptide
 CC sequences. The present sequence is that of human growth hormone mutant
 CC substituted with residues from an hGH analogue (prolactin, placental
 CC lactogen or porcine growth hormone). Note: The present sequence is not
 CC shown in the specification but was created by the indexer using the
 CC mature hGH sequence and information contained in the specification
 XX
 SQ Sequence 191 AA;

Query Match 59.0%; Score 470; DB 5; Length 191;
 Best Local Similarity 69.2%; Pred. No. 6.1e-24;
 Matches 101; Conservative 8; Mismatches 19; Indels 18; Gaps 3;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 1 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 60
 Qy 62 PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----H 108
 |||||||||||||||||||||||||||| | | : | :
 Db 61 PSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVVDILEQLKR 119
 Qy 109 LVEALYLVCGERGFYTPKTRGIVEQ 134
 | : | | : : : | : | : |
 Db 120 LIEGLMLILSDG----SPRTGQIFKQ 141

RESULT 6
 AAP90129
 ID AAP90129 standard; protein; 192 AA.
 XX
 AC AAP90129;
 XX
 DT 24-OCT-2003 (revised)
 DT 25-MAR-2003 (revised)
 DT 06-FEB-1996 (revised)
 DT 01-NOV-1989 (first entry)
 XX
 DE Human growth hormone.

XX
 KW Human growth hormone; fusion protein; recombinant vector.
 XX
 OS Homo sapiens; (Human).
 XX
 PN JP01144981-A.
 XX
 PD 07-JUN-1989.
 XX
 PF 02-DEC-1987; 87JP-00304937.
 XX
 PR 02-DEC-1987; 87JP-00304937.
 XX
 PA (WAKT) WAKUNAGA SEIYAKU KK.
 XX
 DR WPI; 1989-209284/29.
 DR N-PSDB; AAN90269.
 XX
 PT Recombinant vector contg. fused protein aminoacid coding - composed of
 PT growth hormone or its polypeptide deriv. and foreign protein.
 XX
 PS Disclosure; Fig 1; 19pp; Japanese.
 XX
 CC The invention consists of a vector contg. a fusion protein which is
 CC formed by ligating, downstream of a promoter, hGH or a deriv. (pref.
 CC formed by substn. of Met-14 with Leu) and a foreign protein. Stability
 CC of the vector in the host is greatly increased so the protein yield is
 CC higher. (Updated on 25-MAR-2003 to correct PA field.) (Updated on 24-OCT-
 CC 2003 to standardise OS field)
 XX
 SQ Sequence 192 AA;

Query Match 58.5%; Score 466; DB 1; Length 192;
 Best Local Similarity 70.5%; Pred. No. 1.1e-23;
 Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
 ||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
 Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
 |||||||||||||||||||||||||||||||| | | : | : |
 Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLE 119
 Qy 111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
 | : : | | | : | : | : |
 Db 120 EGIQTLMGRLLEDG---SPRTGQIFKQ 142

RESULT 7
 AAW92264
 ID AAW92264 standard; protein; 192 AA.
 XX
 AC AAW92264;
 XX
 DT 08-JUN-1999 (first entry)
 XX

DE Human anti-angiogenic peptide hGH Met-1Phe191.
XX
KW Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
KW placental vascularisation; pregnancy; treatment; angiogenic disease;
KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
KW granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
KW gene therapy; pre-eclampsia; intrauterine growth retardation;
KW placental dysfunction.
XX
OS Homo sapiens.
XX
PN WO9851323-A1.
XX
PD 19-NOV-1998.
XX
PF 12-MAY-1998; 98WO-US009691.
XX
PR 13-MAY-1997; 97US-0046394P.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Weiner RI, Martial JA, Struman I, Taylor R;
XX
DR WPI; 1999-045192/04.
DR N-PSDB; AAX01706.
XX
PT New anti-angiogenic peptides - comprise N-terminal fragments of human
PT placental lactogen, human growth hormone, growth hormone variant or human
PT prolactin.
XX
PS Example 3; Page 49; 87pp; English.
XX
CC This invention describes novel human anti-angiogenic peptides derived
CC from 10 to 150 consecutive amino acids selected from the N-terminal end
CC of human placental lactogen (hPL), human growth hormone (hGH), growth
CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC capillary endothelial cell proliferation and organisation (ii) inhibit
CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC least one specific receptor which does not bind an intact full length
CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC diagnosing a probable abnormality of placental vascularisation during
CC pregnancy. The peptides can be used for treating an angiogenic disease in
CC a subject, for inhibiting tumour formation or growth in a patient or for
CC modulating vascularisation of a patient's placenta. In particular, the
CC peptides can be used for preventing or treating e.g. malignant tumours,
CC angiofibroma, arteriovenous malformation, arthritic such as rheumatoid
CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
CC delayed wound healing, proliferative retinopathy such as diabetic
CC retinopathy, macular degeneration, granulations such as those occurring
CC in haemophilic joints, inappropriate vascularisation in wound healing
CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,

DR WPI; 1989-243092/34.
 XX
 PT New human nerve growth factor gene encoding fusion protein - having
 PT cleavage site for thrombin, useful for treating geriatric dementia, etc.
 XX
 PS Disclosure; Page 21; 38pp; English.
 XX
 CC Human growth hormone segment, used at the N-terminal of a fusion protein,
 CC which contains a thrombin recognition site, and human beta nerve growth
 CC factor (beta-NGF) at the C-terminal. Beta-NGF can be used to control
 CC geriatric dementia and other nervous disorders, and can be released from
 CC the fusion protein by incubation with thrombin (see AAN90577-8, AAP91034,
 CC AAP91299). (Updated on 24-OCT-2003 to standardise OS field)
 XX
 SQ Sequence 140 AA;

Query Match 58.3%; Score 465; DB 1; Length 140;
 Best Local Similarity 98.9%; Pred. No. 1e-23;
 Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60
 QY 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
 ||||||||||||||||||||||||||||||||||||||||||||
 Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 9

AAP91299

ID AAP91299 standard; protein; 261 AA.

XX

AC AAP91299;

XX

DT 24-OCT-2003 (revised)

DT 14-DEC-1989 (first entry)

XX

DE Human nerve growth factor and human growth hormone fusion protein.

XX

KW Human nerve growth factor; fusion protein; thrombin; geriatric dementia;
 KW nervous disorders; human growth hormone.

XX

OS Homo sapiens; (human).

XX

FH Key Location/Qualifiers

FT Region 1. .140

FT Region 141. .143

FT Region 144. .261

XX

PN EP329175-A.

XX

PD 23-AUG-1989.

XX

PF 17-FEB-1989; 89EP-00102795.

XX

PR 19-FEB-1988; 88JP-00035042.

XX
PA (TOYJ) TOSOH CORP.
XX
DR WPI; 1991-128768/18.
DR N-PSDB; AAQ11578.
XX
PT Purificn. of human neuron growth factor beta-sub:unit-contg. protein - by
PT contacting with gel having cation exchange gp. in presence of urea.
XX
PS Disclosure; Fig 1; 7pp; Japanese.
XX
CC A recombinant human nerve growth factor beta subunit-contg. protein can
CC be produced as this fusion protein. It is purified by contacting a gel
CC having a cation exchange gp. with the fusion protein, in the presence of
CC urea. The purified protein is useful in a medicament for treating
CC disorders of the nervous system, eg dementia. (Updated on 25-MAR-2003 to
CC correct PF field.)
XX
SQ Sequence 262 AA;

Query Match 58.3%; Score 465; DB 2; Length 262;
Best Local Similarity 98.9%; Pred. No. 1.7e-23;
Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
|||||
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
|||||
Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 11

AAR03255

ID AAR03255 standard; protein; 310 AA.

XX

AC AAR03255;

XX

DT 19-JUL-1990 (first entry)

XX

DE Fusion protein of B-cell stimulatory factor-2 and B-cell differentiation
DE factor.

XX

KW B-cell stimulatory factor-2; interleukin-6; B-cell differentiation;
KW interleukin-5; fusion protein.

XX

OS Homo sapiens.

XX

PN JP02013375-A.

XX

PD 17-JAN-1990.

XX

PF 01-JUL-1988; 88JP-00162556.

XX

PR 01-JUL-1988; 88JP-00162556.

XX

PA (TOYJ) TOSOH CORP.
 XX
 DR WPI; 1990-062207/09.
 DR N-PSDB; AAQ02028.
 XX
 PT Prepn. of human B cell differentiation factor - from specified DNA
 PT sequence segment, by recombinant DNA technique, gives protein of
 PT specified amino acid sequence.
 XX
 PS Claim 31; Page 9; 17pp; Japanese.
 XX
 CC The protein is produced by fusing DNA encoding BDF (IL-) with DNA
 CC encoding BSF-2 (IL-5) and ligating the product into an expression vector
 CC See also AAR05311 and AAR05313
 XX
 SQ Sequence 310 AA;

Query Match 58.3%; Score 465; DB 2; Length 310;
 Best Local Similarity 98.9%; Pred. No. 2e-23;
 Matches 91; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRFLDNAMLRHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
 ||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 1 MFPTIPLSRFLDNAMLRHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
 Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
 ||||||||||||||||||||||||||||||||||||
 Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 12

ABG31862

ID ABG31862 standard; protein; 191 AA.

XX

AC ABG31862;

XX

DT 05-NOV-2002 (first entry)

XX

DE Mature human growth hormone (hGH), mutant #4.

XX

KW Human; growth hormone; hGH; Turner's syndrome; achondroplasia;
 KW growth hormone deficiency in adults; GHDA; chronic renal insufficiency;
 KW renal failure in children; acquired immune deficiency syndrome; AIDS;
 KW AIDS wasting; cachexia; mutant; mutein.

XX

OS Homo sapiens.

OS Synthetic.

XX

FH Key Location/Qualifiers

FT Misc-difference 134

FT /note= "Wild type Arg substituted by Lys"

XX

PN WO200255532-A2.

XX

PD 18-JUL-2002.

XX

PF 10-JAN-2002; 2002WO-DK000017.

XX
 PR 11-JAN-2001; 2001DK-00000042.
 PR 11-JAN-2001; 2001US-0261411P.
 XX
 PA (MAXY-) MAXYGEN APS.
 PA (MAXY-) MAXYGEN HOLDINGS LTD.
 XX
 PI Andersen KV, Drustrup J, Christiansen J;
 XX
 DR WPI; 2002-608345/65.
 XX
 PT New conjugates exhibiting growth hormone activity, useful for treating a
 PT disease or for manufacturing a medicament for treating a disease, e.g.
 PT Turner's syndrome, growth hormone deficiency, achondroplasia, AIDS
 PT wasting or cachexia.
 XX
 PS Claim 10; Page; 74pp; English.
 XX
 CC The invention relates to new conjugates, which exhibit growth hormone
 CC (GH) activity and comprise at least one non-polypeptide group covalently
 CC attached to a GH polypeptide. The amino acid sequence of the conjugates
 CC differs from that of wild type human GH in at least one introduced and at
 CC least one removed amino acid residue comprising an attachment group for
 CC the first non-polypeptide group. The conjugate or pharmaceutical
 CC composition is useful for treating a disease or for manufacturing a
 CC medicament for treating a disease, e.g. Turner's syndrome, GH deficiency
 CC in adults (i.e. GHDA), achondroplasia, chronic renal insufficiency or
 CC failure (including renal failure in children), acquired immune deficiency
 CC syndrome (AIDS) wasting, cachexia in AIDS patients, or cachexia
 CC associated with other diseases. The conjugates are useful for treating a
 CC variety of disorders caused by growth hormone inadequacy. The present
 CC sequence represents the amino acid sequence of a mutant human growth
 CC hormone. Note: The present sequence is not shown in the specification but
 CC is derived from the wild type human growth hormone sequence given in SEQ
 CC ID No.2 (see ABG31857)
 XX
 SQ Sequence 191 AA;

Query Match 58.2%; Score 464; DB 5; Length 191;
 Best Local Similarity 71.0%; Pred. No. 1.5e-23;
 Matches 103; Conservative 6; Mismatches 20; Indels 16; Gaps 4;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFD TYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 |||
 Db 1 FPTIPLSRLFDNAMLRAHRLHQLAFD TYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 60
 Qy 62 PSNREETQQKSNLELLRLISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
 ||| : ||
 Db 61 PSNREETQQKSNLELLRLISLLLIQSWLEPVQF-LRSVFANSILVYGASDSNVYDLLKDL EE 119
 Qy 112 ALYLVCG--ERGFFYTPKTRGIVEQ 134
 : : | | : || | : |
 Db 120 GIQTLMGRL EDG---SPKTGQIFKQ 141

RESULT 13
 ABG94860

ID ABG94860 standard; protein; 191 AA.
XX
AC ABG94860;
XX
DT 03-DEC-2002 (first entry)
XX
DE Human growth hormone mutant hPL (109-112).
XX
KW Growth hormone; placental lactogen; prolactin; active domain; hGH;
KW structure-function relationship; segment-substituted polypeptide; mutant;
KW mutein.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN US6428954-B1.
XX
PD 06-AUG-2002.
XX
PF 06-JUN-1995; 95US-00483039.
XX
PR 28-OCT-1988; 88US-00264611.
PR 26-OCT-1989; 89US-00428066.
PR 27-APR-1992; 92US-00875204.
PR 13-OCT-1992; 92US-00960227.
PR 02-FEB-1994; 94US-00190723.
XX
PA (GETH) GENENTECH INC.
XX
PI Wells JA, Cunningham BC;
XX
DR WPI; 2002-696875/75.
XX
PT Identifying active domains within cloned polypeptides of known amino acid
PT sequence by substituting analog segments into the parent polypeptide is
PT useful to determine the relationship between structure and function.
XX
PS Example 1; Page; 86pp; English.
XX
CC The invention relates to identifying an unknown active domain in a region
CC of known amino acid sequence in a parent polypeptide e.g. human growth
CC hormone (hGH) which has been cloned and has a pre-identified biological
CC activity, where the active domain interacts with a target when the parent
CC polypeptide is in its native-folded form and the interaction is
CC responsible for the biological activity comprising: (a) comparing the
CC amino acid sequence or polypeptide structure in the region of known amino
CC acid sequence of hGH with the amino acid sequence or polypeptide
CC structure in a region of known amino acid sequence of an analogue
CC polypeptide (e.g. prolactin, placental lactogen or porcine growth
CC hormone) which has at least 15% homology with hGH alpha-carbon
CC coordinates within about 2-3.5 angstroms of hGH alpha-carbon coordinates
CC for about 60% of the analogue sequence, where any interaction of the
CC analogue with the target is different from target interaction with hGH;
CC (b) substituting DNA encoding an analogous polypeptide segment from the
CC analogue into DNA encoding the full length hGH, and expressing a segment-
CC substituted polypeptide; (c) contacting the segment-substituted
CC polypeptide with the target to determine interaction; (d) repeating steps

Qy 112 ALYLVCG--ERGFFYTPKTRGIVEQ 134
 : : | | | :|:| | :|
 Db 120 GIQTLMGRLEDG---SPRTGQIFKQ 141

RESULT 15

AAR05313

ID AAR05313 standard; protein; 144 AA.

XX

AC AAR05313;

XX

DT 19-JUL-1990 (first entry)

XX

DE Segment of B-cell stimulatory factor-2 (IL-5).

XX

KW B-cell stimulatory factor-2; interleukin-5.

XX

OS Homo sapiens.

XX

PN JP02013375-A.

XX

PD 17-JAN-1990.

XX

PF 01-JUL-1988; 88JP-00162556.

XX

PR 01-JUL-1988; 88JP-00162556.

XX

PA (TOYJ) TOSOH CORP.

XX

DR WPI; 1990-062207/09.

DR N-PSDB; AAQ02028.

XX

PT Prepn. of human B cell differentiation factor - from specified DNA

PT sequence segment, by recombinant DNA technique, gives protein of

PT specified amino acid sequence.

XX

PS Disclosure; Page 9; 17pp; Japanese.

XX

CC The sequence encoding this protein can be fused with DNA encoding B-cell

CC differentiation factor (IL-6) and ligated into an expression vector for

CC prodn. of a fusion protein. See also AAR05311

XX

SQ Sequence 144 AA;

Query Match 58.0%; Score 462; DB 2; Length 144;

Best Local Similarity 97.8%; Pred. No. 1.7e-23;

Matches 90; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
 |||||:|||||
 Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLENPQTSLSFSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
 |||||
 Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

Search completed: July 15, 2004, 16:35:36
Job time : 79.3582 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: July 15, 2004, 16:30:45 ; Search time 22.6679 Seconds
(without alignments)
341.624 Million cell updates/sec

Title: US-09-423-100-7
Perfect score: 797
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....IVEQCCTSICSLYQLENYCN 150

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 389414 seqs, 51625971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/2/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	%		DB	ID	Description
		Query Match	Length			
1	466	58.5	192	1	US-08-093-383-1	Sequence 1, Appli
2	461	57.8	191	4	US-09-284-878-5	Sequence 5, Appli
3	461	57.8	191	4	US-09-462-941-1	Sequence 1, Appli
4	461	57.8	194	2	US-08-383-621-4	Sequence 4, Appli
5	461	57.8	194	3	US-08-459-906-4	Sequence 4, Appli
6	461	57.8	217	3	US-08-589-028-10	Sequence 10, Appl
7	461	57.8	217	3	US-08-784-582-10	Sequence 10, Appl
8	461	57.8	217	3	US-08-785-271-10	Sequence 10, Appl
9	461	57.8	217	3	US-08-759-628-11	Sequence 11, Appl
10	461	57.8	217	4	US-09-284-878-1	Sequence 1, Appli
11	461	57.8	217	4	US-09-511-024A-1	Sequence 1, Appli

12	461	57.8	241	4	US-09-424-620B-25	Sequence 25, Appl
13	461	57.8	245	4	US-09-280-030-66	Sequence 66, Appl
14	461	57.8	274	3	US-08-784-582-71	Sequence 71, Appl
15	461	57.8	360	3	US-08-784-582-73	Sequence 73, Appl
16	460	57.7	191	4	US-09-554-451-1	Sequence 1, Appli
17	455	57.1	191	4	US-09-465-461-1	Sequence 1, Appli
18	455	57.1	191	4	US-09-554-451-3	Sequence 3, Appli
19	455	57.1	217	1	US-08-187-756C-4	Sequence 4, Appli
20	455	57.1	217	1	US-08-469-486-51	Sequence 51, Appl
21	455	57.1	217	2	US-08-469-658-51	Sequence 51, Appl
22	455	57.1	217	2	US-08-710-324A-4	Sequence 4, Appli
23	455	57.1	217	4	US-09-411-657-4	Sequence 4, Appli
24	454	57.0	400	4	US-09-420-819-37	Sequence 37, Appl
25	454	57.0	401	4	US-09-420-819-36	Sequence 36, Appl
26	448	56.2	191	3	US-08-800-215C-18	Sequence 18, Appl
27	448	56.2	191	4	US-09-511-024A-4	Sequence 4, Appli
28	446	56.0	191	3	US-08-800-215C-16	Sequence 16, Appl
29	446	56.0	191	3	US-08-800-215C-20	Sequence 20, Appl
30	442.5	55.5	191	4	US-09-511-024A-9	Sequence 9, Appli
31	442	55.5	191	4	US-09-511-024A-5	Sequence 5, Appli
32	435	54.6	191	4	US-09-511-024A-3	Sequence 3, Appli
33	435	54.6	191	4	US-09-511-024A-6	Sequence 6, Appli
34	414	51.9	191	4	US-09-511-024A-7	Sequence 7, Appli
35	410.5	51.5	190	4	US-09-511-024A-13	Sequence 13, Appl
36	407	51.1	190	4	US-09-511-024A-10	Sequence 10, Appl
37	407	51.1	191	4	US-09-511-024A-8	Sequence 8, Appli
38	406.5	51.0	190	4	US-09-511-024A-12	Sequence 12, Appl
39	403.5	50.6	190	4	US-09-511-024A-11	Sequence 11, Appl
40	365.5	45.9	176	3	US-08-791-728-1	Sequence 1, Appli
41	365.5	45.9	176	4	US-08-990-774-1	Sequence 1, Appli
42	359.5	45.1	176	3	US-08-791-728-2	Sequence 2, Appli
43	359.5	45.1	176	4	US-08-990-774-2	Sequence 2, Appli
44	343	43.0	168	6	5424199-3	Patent No. 5424199
45	334.5	42.0	198	1	US-08-187-756C-5	Sequence 5, Appli

ALIGNMENTS

RESULT 1
 US-08-093-383-1
 ; Sequence 1, Application US/08093383
 ; Patent No. 5489529
 ; GENERAL INFORMATION:
 ; APPLICANT: DeBoer, Herman A.
 ; APPLICANT: Heyneker, Herbert L.
 ; APPLICANT: Seeburg, Peter H.
 ; TITLE OF INVENTION: DNA for Expression of Bovine Growth Hormone
 ; NUMBER OF SEQUENCES: 30
 ; CORRESPONDENCE ADDRESS:
 ; ADDRESSEE: Genentech, Inc.
 ; STREET: 460 Point San Bruno Blvd
 ; CITY: South San Francisco
 ; STATE: California
 ; COUNTRY: USA
 ; ZIP: 94080
 ; COMPUTER READABLE FORM:


```

; MEDIUM TYPE: 5.25 inch, 360 Kb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: patin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/093,383
; FILING DATE: 14-JUL-1993
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 07/619827
; FILING DATE: 28-NOV-1990
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 07/198824
; FILING DATE: 05-APR-1988
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 06/632361
; FILING DATE: 19-JUL-1984
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 06/303687
; FILING DATE: 18-SEP-1981
; ATTORNEY/AGENT INFORMATION:
; NAME: Johnston, Sean A.
; REGISTRATION NUMBER: P35,910
; REFERENCE/DOCKET NUMBER: 46C4
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415/225-3562
; TELEFAX: 415/952-9881
; TELEX: 910/371-7168
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 192 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
US-08-093-383-1

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Query Match          58.5%; Score 466; DB 1; Length 192;
Best Local Similarity 70.5%; Pred. No. 1.3e-42;
Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

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Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60
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Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60

Qy     61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
        ||||||||||||||||||||||||||||| | | : | : |
Db     61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLE 119

Qy    111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
        | : : | | | : | : | | : |
Db    120 EGIQTLMGRLEDG---SPRTGQIFKQ 142

```

```

RESULT 2
US-09-284-878-5
; Sequence 5, Application US/09284878
; Patent No. 6342375
; GENERAL INFORMATION:

```

```

; APPLICANT: Olazaran, Martha Guerrero
; APPLICANT: Saldana, Hugo Barrera
; APPLICANT: Salvado, Jose Maria Viader
; TITLE OF INVENTION: Genetically Modified Methylophilic P. pastoris Yeast
for the
; TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone
; FILE REFERENCE: 1829.0010000
; CURRENT APPLICATION NUMBER: US/09/284,878
; CURRENT FILING DATE: 1999-07-21
; PRIOR APPLICATION NUMBER: PCT/MX97/00033
; PRIOR FILING DATE: 1997-10-24
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 5
; LENGTH: 191
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-284-878-5

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Query Match          57.8%; Score 461; DB 4; Length 191;
Best Local Similarity 70.3%; Pred. No. 4.6e-42;
Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```

```

Qy      2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSEIPT 61
        |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSEIPT 60

Qy      62 PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
        ||||||||||||||||||||||||||||| | | : | : | | |
Db      61 PSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLLE 119

Qy      112 ALYLVCG--ERGFFYTPKTRGIVEQ 134
        : : | | | :|:| | :|
Db      120 GIQTLMGRLLEDG---SPRTGQIFKQ 141

```

RESULT 3

```

US-09-462-941-1
; Sequence 1, Application US/09462941
; Patent No. 6608183
; GENERAL INFORMATION:
; APPLICANT: Cox III, George N
; APPLICANT: Bolder Biotechnology, Inc.
; TITLE OF INVENTION: Derivatives of Growth Hormone and Related Proteins
; FILE REFERENCE: 4152-1-PUS
; CURRENT APPLICATION NUMBER: US/09/462,941
; CURRENT FILING DATE: 2000-01-14
; PRIOR APPLICATION NUMBER: 60/052,516
; PRIOR FILING DATE: 1997-07-14
; NUMBER OF SEQ ID NOS: 41
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
; LENGTH: 191
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-462-941-1

```

Query Match 57.8%; Score 461; DB 4; Length 191;
Best Local Similarity 70.3%; Pred. No. 4.6e-42;
Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```
Qy      2  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
          ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 60

Qy     62  PSNREETQQKSNLELLLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
          ||||||||||||||||||||||||||||  | | : | :  | |
Db     61  PSNREETQQKSNLELLLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDL EE 119

Qy    112  ALYLVCG--ERGFFYTPKTRGIVEQ 134
          : : | | | : | : | : |
Db    120  GIQTLMGRL EDG--SPRTGQIFKQ 141
```

RESULT 4

US-08-383-621-4

; Sequence 4, Application US/08383621

; Patent No. 5951972

; GENERAL INFORMATION:

; APPLICANT: Daley, Michael J.

; APPLICANT: Buckwalter, Brian L.

; APPLICANT: Cady, Susan M.

; APPLICANT: Shieh, Hong-Ming

; APPLICANT: Bohlen, Peter

; APPLICANT: Seddon, Andrew P.

; TITLE OF INVENTION: Stabilization Of Somatotropins And Other

; TITLE OF INVENTION: Proteins By Modification Of Cysteine Residues

; NUMBER OF SEQUENCES: 11

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Dr. Estelle J. Tsevdos

; STREET: 1937 West Main Street, P.O. Box 60

; CITY: Stamford

; STATE: Connecticut

; COUNTRY: U.S.A.

; ZIP: 06904-0060

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: PatentIn Release #1.0, Version #1.25

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/08/383,621

; FILING DATE: 06-FEB-1995

; CLASSIFICATION: 514

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: US 07/766,142

; FILING DATE: 25-SEP-1991

; ATTORNEY/AGENT INFORMATION:

; NAME: Tsevdos, Estelle J.

; REGISTRATION NUMBER: 31,145

; REFERENCE/DOCKET NUMBER: 31,278-01

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 203-321-2756

; TELEFAX: 203-321-2971

```

;       TELEX:   203-710-474-4059
;   INFORMATION FOR SEQ ID NO:   4:
;       SEQUENCE CHARACTERISTICS:
;           LENGTH: 194 amino acids
;           TYPE:   amino acid
;           TOPOLOGY: linear
;       MOLECULE TYPE:   protein
US-08-383-621-4

```

RESULT 5
US-08-459-906-4


```
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/589,028
; FILING DATE: Concurrently Herewith
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Highlander, Steven L.
; REGISTRATION NUMBER: 47,642
; REFERENCE/DOCKET NUMBER: UTSD:426\HYL
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (512) 418-3000
; TELEFAX: (512) 474-7577
; INFORMATION FOR SEQ ID NO: 10:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 217 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
US-08-589-028-10
```

```
Query Match          57.8%; Score 461; DB 3; Length 217;
Best Local Similarity 70.3%; Pred. No. 5.4e-42;
Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;
```

```
Qy      2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSES IPT 61
          |||
Db      27 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSES IPT 86

Qy      62 PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
          |||
Db      87 PSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDL EE 145

Qy      112 ALYLVCG--ERGFFYTPKTRGIVEQ 134
          : : | | | :|:| | :|
Db      146 GIQTLMGRL EDG---SPRTGQIFKQ 167
```

RESULT 7

US-08-784-582-10

```
; Sequence 10, Application US/08784582
; Patent No. 6110707
```

; GENERAL INFORMATION:

```
; APPLICANT: Newgard, Christopher B.
; APPLICANT: Halban, Philippe A.
; APPLICANT: No. 6110707mington, Karl D.
; APPLICANT: Clark, Samuel A.
; APPLICANT: Thigpen, Anice E.
; APPLICANT: Quaade, Christian
; APPLICANT: Kruse, Fred
; APPLICANT: McGarry, Dennis
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
; TITLE OF INVENTION: SECRETORY CELL LINES
; NUMBER OF SEQUENCES: 79
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Arnold, White & Durkee
; STREET: P.O. Box 4433
; CITY: Houston
```

```

; STATE: Texas
; COUNTRY: USA
; ZIP: 77210
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/784,582
; FILING DATE: Concurrently Herewith
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/028,427
; FILING DATE: 15-OCT-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/589,028
; FILING DATE: 19-JAN-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Highlander, Steven L.
; REGISTRATION NUMBER: 37,642
; REFERENCE/DOCKET NUMBER: UTSD:514
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 512/418-3000
; TELEFAX: 512/474-7577
; INFORMATION FOR SEQ ID NO: 10:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 217 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
US-08-784-582-10

```

```

Query Match          57.8%; Score 461; DB 3; Length 217;
Best Local Similarity 70.3%; Pred. No. 5.4e-42;
Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```

```

Qy      2  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
          |||
Db      27  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 86

Qy      62  PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
          |||
Db      87  PSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDL EE 145

Qy     112  ALYLVCG--ERGFFYTPKTRGIVEQ 134
          : : | | | :|:| | :|
Db     146  GIQTLMGRLEDG---SPRTGQIFKQ 167

```

```

RESULT 8
US-08-785-271-10
; Sequence 10, Application US/08785271
; Patent No. 6194176
; GENERAL INFORMATION:
; APPLICANT: Newgard, Christopher B.
; APPLICANT: Halban, Philippe A.

```

```

; APPLICANT: No. 6194176mington, Karl D.
; APPLICANT: Clark, Samuel A.
; APPLICANT: Thigpen, Anice E.
; APPLICANT: Quaade, Christian
; APPLICANT: Kruse, Fred
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
; TITLE OF INVENTION: SECRETORY CELL LINES
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Arnold, White & Durkee
; STREET: P.O. Box 4433
; CITY: Houston
; STATE: Texas
; COUNTRY: USA
; ZIP: 77210
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/785,271
; FILING DATE: Concurrently Herewith
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/589,028
; FILING DATE: 19-JAN-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Highlander, Steven L.
; REGISTRATION NUMBER: 37,642
; REFERENCE/DOCKET NUMBER: UTSD:513
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 512/418-3000
; TELEFAX: 512/474-7577
; INFORMATION FOR SEQ ID NO: 10:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 217 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
US-08-785-271-10

```

Query Match 57.8%; Score 461; DB 3; Length 217;

Best Local Similarity 70.3%; Pred. No. 5.4e-42;

Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```

Qy      2  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
          ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      27  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy      62  PSNREETQQKSNLELLRLISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
          ||||||||||||||||||||||||||||  ||  :  :  ||
Db      87  PSNREETQQKSNLELLRLISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLLE 145

Qy     112  ALYLVCG--ERGGFFYTPKTRGIVEQ 134
          :  :  |  |  |  :  :  |  |  :  :
Db     146  GIQTLMGRLLEDG---SPRTGQIFKQ 167

```


RESULT 9

US-08-759-628-11

; Sequence 11, Application US/08759628

; Patent No. 6225446

; GENERAL INFORMATION:

; APPLICANT: Altmann, Scott W.

; APPLICANT: Rock, Fernando L.

; APPLICANT: Bazan, J. Fernando

; APPLICANT: Kastelein, Robert A.

; TITLE OF INVENTION: MUTATIONAL VARIANTS OF MAMMLIAN PROTEINS

; NUMBER OF SEQUENCES: 11

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: DNAX Research Institute

; STREET: 901 California Avenue

; CITY: Palo Alto

; STATE: California

; COUNTRY: USA

; ZIP: 94304-1104

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: PatentIn Release #1.0, Version #1.30

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/08/759,628

; FILING DATE: 05-DEC-1996

; CLASSIFICATION: 435

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: US 60/008,574

; FILING DATE: 06-DEC-1995

; ATTORNEY/AGENT INFORMATION:

; NAME: Ching, Edwin P.

; REGISTRATION NUMBER: 34,090

; REFERENCE/DOCKET NUMBER: DX0552Q

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 415-852-9196

; TELEFAX: 415-496-1200

; INFORMATION FOR SEQ ID NO: 11:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 217 amino acids

; TYPE: amino acid

; STRANDEDNESS: single

; TOPOLOGY: linear

; MOLECULE TYPE: protein

; FEATURE:

; NAME/KEY: Peptide

; LOCATION: 32..53

; FEATURE:

; NAME/KEY: Peptide

; LOCATION: 94..115

; FEATURE:

; NAME/KEY: Peptide

; LOCATION: 133..153

; FEATURE:

; NAME/KEY: Peptide

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;      LOCATION: 192..210
;      OTHER INFORMATION: /note= "The peptides above are
;      OTHER INFORMATION: depicted in Figure 1"
US-08-759-628-11

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Query Match 57.8%; Score 461; DB 3; Length 217;
Best Local Similarity 70.3%; Pred. No. 5.4e-42;
Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

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Qy      2  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT  61
      ||||||||||||||||||||||||||||||||||||||||||||||||| |||||
Db     27  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT  86

Qy     62  PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
      ||||||||||||||||||||||||||||| | | : | : | |
Db     87  PSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDL EE 145

Qy    112  ALYLVCG--ERGFFYTPKTRGIVEQ 134
      : : | | | : | : | | : |
Db   146  GIOTLMGRLEDG---SPRTGQIFKQ 167

```

```

RESULT 10
US-09-284-878-1
; Sequence 1, Application US/09284878
; Patent No. 6342375
; GENERAL INFORMATION:
; APPLICANT: Olazaran, Martha Guerrero
; APPLICANT: Saldana, Hugo Barrera
; APPLICANT: Salvado, Jose Maria Viader
; TITLE OF INVENTION: Genetically Modified Methylophilic P. pastoris Yeast
for the
; TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone
; FILE REFERENCE: 1829.0010000
; CURRENT APPLICATION NUMBER: US/09/284,878
; CURRENT FILING DATE: 1999-07-21
; PRIOR APPLICATION NUMBER: PCT/MX97/00033
; PRIOR FILING DATE: 1997-10-24
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 1
; LENGTH: 217
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-284-878-1

```

Query Match 57.8%; Score 461; DB 4; Length 217;
Best Local Similarity 70.3%; Pred. No. 5.4e-42;
Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```

Qy      2  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT  61
      |||
Db      27  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT  86

Qy      62  PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE  111
      |||
Db      87  PSNREETQOKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLLE  145

```

Qy 112 ALYLVCG--ERGFFYTPKTRGIVEQ 134
 : : | | | :|:| | :|
 Db 146 GIQTLMGRLDGD---SPRTGQIFKQ 167

RESULT 11

US-09-511-024A-1
 ; Sequence 1, Application US/09511024A
 ; Patent No. 6634554
 ; GENERAL INFORMATION:
 ; APPLICANT: Filikov, Anton
 ; APPLICANT: Dahiyat, Bassil I.
 ; TITLE OF INVENTION: NOVEL NUCLEIC ACIDS AND PROTEINS WITH GROWTH HORMONE
 ACTIVITY
 ; FILE REFERENCE: A-67477-1/RFT/RMS/RMK
 ; CURRENT APPLICATION NUMBER: US/09/511,024A
 ; CURRENT FILING DATE: 2002-05-06
 ; PRIOR APPLICATION NUMBER: US 60/133,784
 ; PRIOR FILING DATE: 1999-05-12
 ; NUMBER OF SEQ ID NOS: 13
 ; SOFTWARE: PatentIn version 3.1
 ; SEQ ID NO 1
 ; LENGTH: 217
 ; TYPE: PRT
 ; ORGANISM: Homo sapiens
 ; FEATURE:
 ; NAME/KEY: SIGNAL
 ; LOCATION: (1)..(26)
 ; OTHER INFORMATION:
 ; FEATURE:
 ; NAME/KEY: mat_peptide
 ; LOCATION: (27)..()
 ; OTHER INFORMATION:
 US-09-511-024A-1

Query Match 57.8%; Score 461; DB 4; Length 217;
 Best Local Similarity 70.3%; Pred. No. 5.4e-42;
 Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSES IPT 61
 |||
 Db 27 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSES IPT 86
 Qy 62 PSNREETQQKSNLELLRLISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
 ||| :|:
 Db 87 PSNREETQQKSNLELLRLISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDL EE 145
 Qy 112 ALYLVCG--ERGFFYTPKTRGIVEQ 134
 : : | | | :|:| | :|
 Db 146 GIQTLMGRLDGD---SPRTGQIFKQ 167

RESULT 12

US-09-424-620B-25
 ; Sequence 25, Application US/09424620B
 ; Patent No. 6391585

```

; GENERAL INFORMATION:
;   APPLICANT: HANIL SYNTHETIC FIBER CO., LTD.
;             JANG, Ki-Ryong
;             MOON, Jae-Woong
;             BAE, Cheon-Soon
;             YANG, Doo-Suk
;             LEE, Jee-Won
;             SEONG, Baik-Lin
;   TITLE OF INVENTION: Process for preparing recombinant proteins using
highly
;                       efficient expression vector from Sacharomyces
cerevisiae
;   NUMBER OF SEQUENCES: 25
;   CORRESPONDENCE ADDRESS:
;     ADDRESSEE: BACHMAN & LAPOINTE, P.C.
;     STREET: Suite 1201, 900 Chapel Street
;     CITY: New Haven
;     STATE: Connecticut
;     COUNTRY: U.S.A.
;     ZIP: 06510-2802
;   COMPUTER READABLE FORM:
;     MEDIUM TYPE: Diskette, 3.5 inch, 1.44 Mb storage
;     COMPUTER: IBM
;     OPERATING SYSTEM: WINDOWS 95/98
;     SOFTWARE: MS WORD
;   CURRENT APPLICATION DATA:
;     APPLICATION NUMBER: US/09/424,620B
;     FILING DATE: 24-No. 6391585-1999
;   INFORMATION FOR SEQ ID NO: 25:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH: 241 amino acids
;       TYPE: amino acid
;       TOPOLOGY: linear
;     MOLECULE TYPE: PROTEIN
;     SEQUENCE DESCRIPTION: SEQ ID NO: 25:
US-09-424-620B-25

```

```

Query Match          57.8%;  Score 461;  DB 4;  Length 241;
Best Local Similarity 70.3%;  Pred. No. 6.2e-42;
Matches 102;  Conservative 7;  Mismatches 20;  Indels 16;  Gaps 4;

```

```

Qy      2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      51 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 110

Qy      62 PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
        ||||||||||||||||||||||||||||  ||  :  |  :
Db      111 PSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLLE 169

Qy      112 ALYLVCG--ERGFFYTPKTRGIVEQ 134
        :  :  |  |  |  :  |  |  :  |
Db      170 GIQTLMGRLLEDG---SPRTGQIFKQ 191

```

```

RESULT 13
US-09-280-030-66
; Sequence 66, Application US/09280030A

```

```
; Patent No. 6506595
; GENERAL INFORMATION:
; APPLICANT: Sato, Seiji
; APPLICANT: Higashikuni, Naohiko
; APPLICANT: Kudo, Toshiyuki
; APPLICANT: Kondo, Masaaki
; TITLE OF INVENTION: DNAS ENCODING NEW FUSION PROTEINS AND PROCESSES FOR
; TITLE OF INVENTION: PREPARING USEFUL POLYPEPTIDES THROUGH EXPRESSION OF THE
; TITLE OF INVENTION: DNAS
; FILE REFERENCE: 382.1026
; CURRENT APPLICATION NUMBER: US/09/280,030A
; CURRENT FILING DATE: 1999-03-26
; EARLIER APPLICATION NUMBER: JP10-87339/1998
; EARLIER FILING DATE: 1998-03-31
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 66
; LENGTH: 245
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Designated is
; OTHER INFORMATION: an amino acid sequence of MWPsp-MWPmp20-TEV-G-GH
US-09-280-030-66
```

```
Query Match          57.8%; Score 461; DB 4; Length 245;
Best Local Similarity 70.3%; Pred. No. 6.4e-42;
Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;
```

```
Qy      2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIPT 61
          |||
Db      55 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 114

Qy      62 PSNREETQQKSNLELLLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
          |||
Db      115 PSNREETQQKSNLELLLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDL EE 173

Qy      112 ALYLVCG--ERGFFYTPKTRGIVEQ 134
          : : | | | :|:| | :|
Db      174 GIQTLMGRLEDG---SPRTGQIFKQ 195
```

RESULT 14

US-08-784-582-71

```
; Sequence 71, Application US/08784582
; Patent No. 6110707
; GENERAL INFORMATION:
; APPLICANT: Newgard, Christopher B.
; APPLICANT: Halban, Philippe A.
; APPLICANT: No. 6110707mington, Karl D.
; APPLICANT: Clark, Samuel A.
; APPLICANT: Thigpen, Anice E.
; APPLICANT: Quaade, Christian
; APPLICANT: Kruse, Fred
; APPLICANT: McGarry, Dennis
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
; TITLE OF INVENTION: SECRETORY CELL LINES
```

```

; NUMBER OF SEQUENCES: 79
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Arnold, White & Durkee
; STREET: P.O. Box 4433
; CITY: Houston
; STATE: Texas
; COUNTRY: USA
; ZIP: 77210
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/784,582
; FILING DATE: Concurrently Herewith
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/028,427
; FILING DATE: 15-OCT-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/589,028
; FILING DATE: 19-JAN-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Highlander, Steven L.
; REGISTRATION NUMBER: 37,642
; REFERENCE/DOCKET NUMBER: UTSD:514
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 512/418-3000
; TELEFAX: 512/474-7577
; INFORMATION FOR SEQ ID NO: 71:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 274 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
US-08-784-582-71

```

```

Query Match          57.8%;  Score 461;  DB 3;  Length 274;
Best Local Similarity 70.3%;  Pred. No. 7.3e-42;
Matches 102;  Conservative 7;  Mismatches 20;  Indels 16;  Gaps 4;

```

```

Qy      2  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
          ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      27  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

Qy      62  PSNREETQQKSNLELLRLISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
          |||||||||||||||||||||||||||||  | | : | :  | |
Db      87  PSNREETQQKSNLELLRLISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDL EE 145

Qy     112  ALYLVCG--ERGFFYTPKTRGIVEQ 134
          : : | | | : | : | : |
Db     146  GIQTLMGRLEDG---SPRTGQIFKQ 167

```

```

RESULT 15
US-08-784-582-73

```



```

Db      27 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86
Qy      62 PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
        ||||||||||||||||||||||||||||| | | : |: | |
Db      87 PSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLEE 145
Qy      112 ALYLVCG--ERGFFYTPKTRGIVEQ 134
        : : | | | :|:| | :|
Db      146 GIQTLMGRLEDG---SPRTGQIFKQ 167

```

Search completed: July 15, 2004, 16:42:33
 Job time : 23.6679 secs

OM protein - protein search, using sw model

Run on: July 15, 2004, 16:37:41 ; Search time 62.4067 Seconds
(without alignments)
751.267 Million cell updates/sec

Title: US-09-423-100-7
Perfect score: 797
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....IVEQCCTSICSPLYQLENYCN 150

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1285345 seqs, 312560633 residues

Total number of hits satisfying chosen parameters: 1285345

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published Applications_AA:*
1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
2: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*
3: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
4: /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:*
5: /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
6: /cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
7: /cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep:*
8: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
9: /cgn2_6/ptodata/1/pubpaa/US09A_PUBCOMB.pep:*
10: /cgn2_6/ptodata/1/pubpaa/US09B_PUBCOMB.pep:*
11: /cgn2_6/ptodata/1/pubpaa/US09C_PUBCOMB.pep:*
12: /cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
13: /cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep:*
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15: /cgn2_6/ptodata/1/pubpaa/US10C_PUBCOMB.pep:*
16: /cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
17: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*
18: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result	Query	%				
No.	Score	Match	Length	DB	ID	Description

1	797	100.0	150	13	US-10-054-873-7	Sequence 7, Appli
2	555.5	69.7	107	13	US-10-054-873-6	Sequence 6, Appli
3	470	59.0	92	13	US-10-054-873-2	Sequence 2, Appli
4	470	59.0	134	10	US-09-819-094-24	Sequence 24, Appl
5	470	59.0	134	16	US-10-714-067-24	Sequence 24, Appl
6	466	58.5	188	12	US-10-621-693-18	Sequence 18, Appl
7	466	58.5	192	10	US-09-819-094-23	Sequence 23, Appl
8	466	58.5	192	12	US-10-621-693-8	Sequence 8, Appli
9	466	58.5	192	12	US-10-621-693-78	Sequence 78, Appl
10	466	58.5	192	12	US-10-621-693-86	Sequence 86, Appl
11	466	58.5	192	16	US-10-714-067-23	Sequence 23, Appl
12	466	58.5	193	12	US-10-621-693-42	Sequence 42, Appl
13	466	58.5	206	12	US-10-621-693-72	Sequence 72, Appl
14	466	58.5	391	12	US-10-621-693-51	Sequence 51, Appl
15	466	58.5	574	12	US-10-621-693-32	Sequence 32, Appl
16	466	58.5	576	12	US-10-621-693-39	Sequence 39, Appl
17	466	58.5	589	12	US-10-621-693-53	Sequence 53, Appl
18	466	58.5	786	12	US-10-621-693-55	Sequence 55, Appl
19	466	58.5	810	12	US-10-621-693-76	Sequence 76, Appl
20	464	58.2	191	16	US-10-658-834A-875	Sequence 875, App
21	463	58.1	191	16	US-10-658-834A-866	Sequence 866, App
22	463	58.1	191	16	US-10-658-834A-876	Sequence 876, App
23	463	58.1	191	16	US-10-658-834A-887	Sequence 887, App
24	462	58.0	191	16	US-10-658-834A-867	Sequence 867, App
25	462	58.0	191	16	US-10-658-834A-881	Sequence 881, App
26	462	58.0	191	16	US-10-658-834A-888	Sequence 888, App
27	461	57.8	191	10	US-09-984-010-23	Sequence 23, Appl
28	461	57.8	191	12	US-10-646-798-2	Sequence 2, Appli
29	461	57.8	191	12	US-10-621-693-2	Sequence 2, Appli
30	461	57.8	191	12	US-10-621-693-21	Sequence 21, Appl
31	461	57.8	191	12	US-10-621-693-80	Sequence 80, Appl
32	461	57.8	191	12	US-10-621-693-82	Sequence 82, Appl
33	461	57.8	191	12	US-10-621-693-84	Sequence 84, Appl
34	461	57.8	191	14	US-10-153-207-1	Sequence 1, Appli
35	461	57.8	191	14	US-10-400-377-1	Sequence 1, Appli
36	461	57.8	191	14	US-10-400-708-1	Sequence 1, Appli
37	461	57.8	191	14	US-10-298-148-1	Sequence 1, Appli
38	461	57.8	191	16	US-10-718-340-1	Sequence 1, Appli
39	461	57.8	191	16	US-10-658-834A-868	Sequence 868, App
40	461	57.8	191	16	US-10-658-834A-869	Sequence 869, App
41	461	57.8	191	16	US-10-658-834A-870	Sequence 870, App
42	461	57.8	191	16	US-10-658-834A-871	Sequence 871, App
43	461	57.8	191	16	US-10-658-834A-883	Sequence 883, App
44	461	57.8	191	16	US-10-658-834A-884	Sequence 884, App
45	461	57.8	191	16	US-10-658-834A-885	Sequence 885, App

ALIGNMENTS

RESULT 1
 US-10-054-873-7
 ; Sequence 7, Application US/10054873
 ; Publication No. US20020164712A1
 ; GENERAL INFORMATION:
 ; APPLICANT: Gan, Zhong Ru

```

; TITLE OF INVENTION: Chimeric Protein Containing an
;                      Intramolecular Chaperone-Like Sequence
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
;     ADDRESSEE: Townsend and Townsend and Crew LLP
;     STREET: Two Embarcadero Center, Eighth Floor
;     CITY: San Francisco
;     STATE: California
;     COUNTRY: USA
;     ZIP: 94111-3834
; COMPUTER READABLE FORM:
;     MEDIUM TYPE: Floppy disk
;     COMPUTER: IBM PC compatible
;     OPERATING SYSTEM: PC-DOS/MS-DOS
;     SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
;     APPLICATION NUMBER: US/10/054,873
;     FILING DATE: 22-Jan-2002
;     CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
;     APPLICATION NUMBER: WO PCT/CN98/00052
;     FILING DATE: 31-MAR-1998
;     APPLICATION NUMBER: US 09/423,100
;     FILING DATE: 11-DEC-2000
; ATTORNEY/AGENT INFORMATION:
;     NAME: Mycroft, Frank J
;     REGISTRATION NUMBER: 46,946
;     REFERENCE/DOCKET NUMBER: 020167-000130US
; INFORMATION FOR SEQ ID NO: 7:
;     SEQUENCE CHARACTERISTICS:
;         LENGTH: 150 amino acids
;         TYPE: amino acid
;         STRANDEDNESS: <Unknown>
;         TOPOLOGY: linear
;     MOLECULE TYPE: protein
;     SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-10-054-873-7

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```

Query Match      100.0%; Score 797; DB 13; Length 150;
Best Local Similarity 100.0%; Pred. No. 2e-80;
Matches 150; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```

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Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60

Qy     61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGSHLVEALYLVCGER 120
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGSHLVEALYLVCGER 120

Qy    121 GFFYTPKTRGIVEQCCTSICSLYQLENYCN 150
        ||||||||||||||||||||||||||||
Db    121 GFFYTPKTRGIVEQCCTSICSLYQLENYCN 150

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RESULT 2
US-10-054-873-6

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; Sequence 6, Application US/10054873
; Publication No. US20020164712A1
; GENERAL INFORMATION:
; APPLICANT: Gan, Zhong Ru
; TITLE OF INVENTION: Chimeric Protein Containing an
; Intramolecular Chaperone-Like Sequence
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/10/054,873
; FILING DATE: 22-Jan-2002
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/CN98/00052
; FILING DATE: 31-MAR-1998
; APPLICATION NUMBER: US 09/423,100
; FILING DATE: 11-DEC-2000
; ATTORNEY/AGENT INFORMATION:
; NAME: Mycroft, Frank J
; REGISTRATION NUMBER: 46,946
; REFERENCE/DOCKET NUMBER: 020167-000130US
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 107 amino acids
; TYPE: amino acid
; STRANDEDNESS: <Unknown>
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; SEQUENCE DESCRIPTION: SEQ ID NO: 6:
US-10-054-873-6

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Query Match          69.7%; Score 555.5; DB 13; Length 107;
Best Local Similarity 71.3%; Pred. No. 9.6e-54;
Matches 107; Conservative 0; Mismatches 0; Indels 43; Gaps 1;

```

```

Qy      1 MFPTIPLSRLEFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MFPTIPLSRLEFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP----- 49

Qy     61 TPSNREETQQKSNLELLRLISLLLIQSWLEPVQLGTGPRFVNQHLGSHLVEALYLVCGER 120
        ||||||||||||||||||||||||||||||||||||||||
Db     50 -----LGTGPRFVNQHLGSHLVEALYLVCGER 77

Qy    121 GFFYTPKTRGIVEQCCTSICSLYQLENYCN 150
        ||||||||||||||||||||||||||||
Db     78 GFFYTPKTRGIVEQCCTSICSLYQLENYCN 107

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RESULT 3

US-10-054-873-2

; Sequence 2, Application US/10054873

; Publication No. US20020164712A1

; GENERAL INFORMATION:

; APPLICANT: Gan, Zhong Ru

; TITLE OF INVENTION: Chimeric Protein Containing an
Intramolecular Chaperone-Like Sequence

; NUMBER OF SEQUENCES: 7

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Townsend and Townsend and Crew LLP

; STREET: Two Embarcadero Center, Eighth Floor

; CITY: San Francisco

; STATE: California

; COUNTRY: USA

; ZIP: 94111-3834

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: PatentIn Release #1.0, Version #1.30

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/10/054,873

; FILING DATE: 22-Jan-2002

; CLASSIFICATION: <Unknown>

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: WO PCT/CN98/00052

; FILING DATE: 31-MAR-1998

; APPLICATION NUMBER: US 09/423,100

; FILING DATE: 11-DEC-2000

; ATTORNEY/AGENT INFORMATION:

; NAME: Mycroft, Frank J

; REGISTRATION NUMBER: 46,946

; REFERENCE/DOCKET NUMBER: 020167-000130US

; INFORMATION FOR SEQ ID NO: 2:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 92 amino acids

; TYPE: amino acid

; STRANDEDNESS: <Unknown>

; TOPOLOGY: linear

; MOLECULE TYPE: protein

; SEQUENCE DESCRIPTION: SEQ ID NO: 2:

US-10-054-873-2

Query Match 59.0%; Score 470; DB 13; Length 92;

Best Local Similarity 100.0%; Pred. No. 2.6e-44;

Matches 92; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60

|||||

Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

|||||

Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 4

US-09-819-094-24

```
; Sequence 24, Application US/09819094
; Publication No. US20030186382A1
; GENERAL INFORMATION:
; APPLICANT: Weiner, Richard I.
; APPLICANT: Martial, Joseph A.
; APPLICANT: Struman, Ingrid
; APPLICANT: Taylor, Robert
; APPLICANT: Bentzien, Frauke
; TITLE OF INVENTION: No. US20030186382A1 Antiangiogenic Peptide Agents and
Their
; TITLE OF INVENTION: Therapeutic and Diagnostic Use
; FILE REFERENCE: UCSF-018/02US
; CURRENT APPLICATION NUMBER: US/09/819,094
; CURRENT FILING DATE: 2001-03-27
; PRIOR APPLICATION NUMBER: 09/076,675
; PRIOR FILING DATE: 1998-05-12
; PRIOR APPLICATION NUMBER: 60/046,394
; PRIOR FILING DATE: 1997-05-12
; NUMBER OF SEQ ID NOS: 34
; SEQ ID NO 24
; LENGTH: 134
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-819-094-24
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Query Match          59.0%; Score 470; DB 10; Length 134;
Best Local Similarity 100.0%; Pred. No. 4.3e-44;
Matches 92; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60

Qy      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
        ||||||||||||||||||||||||||||||||||||
Db      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
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RESULT 5

US-10-714-067-24

```
; Sequence 24, Application US/10714067
; Publication No. US20040077054A1
; GENERAL INFORMATION:
; APPLICANT: Weiner, Richard I.
; APPLICANT: Martial, Joseph A.
; APPLICANT: Struman, Ingrid
; APPLICANT: Taylor, Robert
; APPLICANT: Bentzien, Frauke
; TITLE OF INVENTION: Novel Antiangiogenic Peptide Agents and Their
; TITLE OF INVENTION: Therapeutic and Diagnostic Use
; FILE REFERENCE: UCSF-018/02US
; CURRENT APPLICATION NUMBER: US/10/714,067
; CURRENT FILING DATE: 2003-11-14
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; PRIOR APPLICATION NUMBER: US/09/819,094
; PRIOR FILING DATE: 2001-03-27
; PRIOR APPLICATION NUMBER: 09/076,675
; PRIOR FILING DATE: 1998-05-12
; PRIOR APPLICATION NUMBER: 60/046,394
; PRIOR FILING DATE: 1997-05-12
; NUMBER OF SEQ ID NOS: 34
; SEQ ID NO 24
; LENGTH: 134
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-714-067-24

Query Match 59.0%; Score 470; DB 16; Length 134;
Best Local Similarity 100.0%; Pred. No. 4.3e-44;
Matches 92; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60
|
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60

Qy 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
|
Db 61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQ 92

RESULT 6

US-10-621-693-18

; Sequence 18, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENCES AS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 18
; LENGTH: 188
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
US-10-621-693-18

Query Match 58.5%; Score 466; DB 12; Length 188;
Best Local Similarity 70.5%; Pred. No. 1.9e-43;
Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60
|

```

Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60
Qy          61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
            |||
Db          61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSILVYGASDSNVYDLLKDLE 119
            |||
Qy          111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
            | : : | | | :|:| | :|
Db          120 EGIQTLMGRLDGD---SPRTGQIFKQ 142

```

RESULT 7

US-09-819-094-23

; Sequence 23, Application US/09819094

; Publication No. US20030186382A1

; GENERAL INFORMATION:

; APPLICANT: Weiner, Richard I.

; APPLICANT: Martial, Joseph A.

; APPLICANT: Struman, Ingrid

; APPLICANT: Taylor, Robert

; APPLICANT: Bentzien, Frauke

; TITLE OF INVENTION: No. US20030186382A1el Antiangiogenic Peptide Agents and Their

; TITLE OF INVENTION: Therapeutic and Diagnostic Use

; FILE REFERENCE: UCSF-018/02US

; CURRENT APPLICATION NUMBER: US/09/819,094

; CURRENT FILING DATE: 2001-03-27

; PRIOR APPLICATION NUMBER: 09/076,675

; PRIOR FILING DATE: 1998-05-12

; PRIOR APPLICATION NUMBER: 60/046,394

; PRIOR FILING DATE: 1997-05-12

; NUMBER OF SEQ ID NOS: 34

; SEQ ID NO 23

; LENGTH: 192

; TYPE: PRT

; ORGANISM: Homo sapiens

US-09-819-094-23

Query Match 58.5%; Score 466; DB 10; Length 192;

Best Local Similarity 70.5%; Pred. No. 1.9e-43;

Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

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Qy          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
            |||
Db          1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60
            |||
Qy          61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
            |||
Db          61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSILVYGASDSNVYDLLKDLE 119
            |||
Qy          111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
            | : : | | | :|:| | :|
Db          120 EGIQTLMGRLDGD---SPRTGQIFKQ 142

```

RESULT 8

US-10-621-693-8


```
; Sequence 8, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN
SEQUENCES AS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 8
; LENGTH: 192
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
; FEATURE:
; NAME/KEY: mat_peptide
; LOCATION: (1)..()
US-10-621-693-8
```

```
Query Match          58.5%; Score 466; DB 12; Length 192;
Best Local Similarity 70.5%; Pred. No. 1.9e-43;
Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;
```

```
Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60

Qy      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
        ||||||||||||||||||||||||||||| | | : | : |
Db      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLE 119

Qy      111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
        | : : | | | : | : |
Db      120 EGIQTLMGRLEDG---SPRTGQIFKQ 142
```

RESULT 9

US-10-621-693-78

```
; Sequence 78, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN
SEQUENCES AS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
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; NAME/KEY: mat_peptide
; LOCATION: (1)..()
US-10-621-693-86

Query Match 58.5%; Score 466; DB 12; Length 192;
Best Local Similarity 70.5%; Pred. No. 1.9e-43;
Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```
Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60

Qy      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
          ||||||||||||||||||||||||||||| | | : |: |
Db      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLE 119

Qy      111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
          | : : | | | : |: | | : |
Db      120 EGIQTLMGRLEDG---SPRTGQIFKQ 142
```

RESULT 11

US-10-714-067-23

; Sequence 23, Application US/10714067
; Publication No. US20040077054A1
; GENERAL INFORMATION:
; APPLICANT: Weiner, Richard I.
; APPLICANT: Martial, Joseph A.
; APPLICANT: Struman, Ingrid
; APPLICANT: Taylor, Robert
; APPLICANT: Bentzien, Frauke
; TITLE OF INVENTION: Novel Antiangiogenic Peptide Agents and Their
; TITLE OF INVENTION: Therapeutic and Diagnostic Use
; FILE REFERENCE: UCSF-018/02US
; CURRENT APPLICATION NUMBER: US/10/714,067
; CURRENT FILING DATE: 2003-11-14
; PRIOR APPLICATION NUMBER: US/09/819,094
; PRIOR FILING DATE: 2001-03-27
; PRIOR APPLICATION NUMBER: 09/076,675
; PRIOR FILING DATE: 1998-05-12
; PRIOR APPLICATION NUMBER: 60/046,394
; PRIOR FILING DATE: 1997-05-12
; NUMBER OF SEQ ID NOS: 34
; SEQ ID NO 23
; LENGTH: 192
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-714-067-23

Query Match 58.5%; Score 466; DB 16; Length 192;
Best Local Similarity 70.5%; Pred. No. 1.9e-43;
Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```
Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
```

```

Qy      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
        |||
Db      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLE 119

Qy      111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
        | : : | | | :|:| | :|
Db      120 EGIQTLMGRLEDG---SPRTGQIFKQ 142

```

RESULT 12

US-10-621-693-42

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; Sequence 42, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN
SEQUENCES AS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 42
; LENGTH: 193
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
US-10-621-693-42

```

```

Query Match          58.5%; Score 466; DB 12; Length 193;
Best Local Similarity 70.5%; Pred. No. 1.9e-43;
Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```

```

Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
        |||
Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIP 60

Qy      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
        |||
Db      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLE 119

Qy      111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
        | : : | | | :|:| | :|
Db      120 EGIQTLMGRLEDG---SPRTGQIFKQ 142

```

RESULT 13

US-10-621-693-72

```

; Sequence 72, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.

```

```
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN
SEQUENCES AS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 72
; LENGTH: 206
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
US-10-621-693-72
```

```
Query Match          58.5%; Score 466; DB 12; Length 206;
Best Local Similarity 70.5%; Pred. No. 2.1e-43;
Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;
```

```
Qy      1 MFPTIPLSRFLDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
      |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MFPTIPLSRFLDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60

Qy      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
      ||||||||||||||||||||||||||||| | | : | : |
Db      61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLE 119

Qy      111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
      | : : | | | :|:| | :|
Db      120 EGIQTLMGRLDGD---SPRTGQIFKQ 142
```

RESULT 14

US-10-621-693-51

```
; Sequence 51, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN
SEQUENCES AS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 51
; LENGTH: 391
; TYPE: PRT
; ORGANISM: Artificial
```

; FEATURE:
; OTHER INFORMATION: synthetic sequence
; FEATURE:
; NAME/KEY: mat_peptide
; LOCATION: (1)..()
US-10-621-693-51

Query Match 58.5%; Score 466; DB 12; Length 391;
Best Local Similarity 70.5%; Pred. No. 4.9e-43;
Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```
Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60
          |||
Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESIP 60

Qy     61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
          |||
Db     61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLE 119

Qy    111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
          | : : | | :|:| | :|
Db    120 EGIQTLMGRLEDG---SPRTGQIFKQ 142
```

RESULT 15

US-10-621-693-32

; Sequence 32, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENCES AS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 32
; LENGTH: 574
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
; FEATURE:
; NAME/KEY: MISC_FEATURE
; LOCATION: (379)..(569)
; OTHER INFORMATION: sequence is repeated N-1 times, where N is a positive whole number
; FEATURE:
; NAME/KEY: mat_peptide
; LOCATION: (1)..()
US-10-621-693-32

Query Match 58.5%; Score 466; DB 12; Length 574;
 Best Local Similarity 70.5%; Pred. No. 8.2e-43;
 Matches 103; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```

Qy      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIP 60

Qy     61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLV 110
          ||||||||||||||||||||||||||||| | | : | : |
Db     61 TPSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLE 119

Qy    111 EALYLVCG--ERGFFYTPKTRGIVEQ 134
          | : : | | | :|:| | :|
Db    120 EGIQTLMGRLEDG--SPRTGQIFKQ 142
  
```

Search completed: July 15, 2004, 17:05:09
 Job time : 62.4067 secs

OM protein - protein search, using sw model

Run on: July 15, 2004, 16:29:19 ; Search time 16.791 Seconds
(without alignments)
859.311 Million cell updates/sec

Title: US-09-423-100-7
Perfect score: 797
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....IVEQCCTSICSLYQLENYCN 150

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283366 seqs, 96191526 residues

Total number of hits satisfying chosen parameters: 283366

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR 78:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	%		Query		DB	ID	Description
	Score	Match	Length				
1	461	57.8	217	1	STHU		somatotropin 1 pre
2	460	57.7	217	2	I67410		somatotropin - rhe
3	426.5	53.5	217	1	STHUV		somatotropin 2 pre
4	426.5	53.5	256	1	STHUV2		somatotropin 2 pre
5	407.5	51.1	217	2	I67409		chorionic somatoma
6	405	50.8	217	2	I67411		somatotropin - rhe
7	396	49.7	212	2	I67408		chorionic somatoma
8	396	49.7	217	2	I53267		chorionic somatoma
9	381	47.8	217	1	LCHUC		choriomammotropin
10	381	47.8	217	2	E32435		choriomammotropin
11	359.5	45.1	215	2	A26449		choriomammotropin
12	310.5	39.0	216	2	B49159		somatotropin - gol
13	307.5	38.6	190	2	PN0140		somatotropin - sei

14	306.5	38.5	190	1	STHO	somatotropin - hor
15	304.5	38.2	216	1	STMS	somatotropin precu
16	302.5	38.0	216	1	STRT	somatotropin precu
17	302.5	38.0	216	2	S49483	somatotropin precu
18	301.5	37.8	190	2	JK0219	somatotropin - Afr
19	301.5	37.8	216	1	STPG	somatotropin precu
20	301.5	37.8	216	2	I46145	somatotropin precu
21	301.5	37.8	216	2	JC4632	somatotropin precu
22	299.5	37.6	216	2	A37782	somatotropin precu
23	297.5	37.3	190	1	A61584	somatotropin - alp
24	295.5	37.1	190	2	JS0429	somatotropin - Arc
25	289.5	36.3	217	1	STBO	somatotropin precu
26	289.5	36.3	217	1	STSH	somatotropin precu
27	289.5	36.3	217	1	STGT	somatotropin precu
28	289.5	36.3	217	2	S32682	somatotropin - dom
29	278.5	34.9	216	2	JC1514	somatotropin precu
30	277.5	34.8	110	1	INRB	insulin precursor
31	277.5	34.8	110	2	B42179	insulin precursor
32	275.5	34.6	216	2	A60509	somatotropin precu
33	275	34.5	96	2	PC7082	epidermal growth f
34	273.5	34.3	51	1	INWHP	insulin - sperm wh
35	273.5	34.3	51	1	INWHF	insulin - finback
36	273.5	34.3	51	1	INEL	insulin - elephant
37	273.5	34.3	110	2	JQ0178	insulin precursor
38	272	34.1	110	2	A42179	insulin precursor
39	271.5	34.1	51	1	INHY	insulin - hamster
40	270	33.9	110	1	IPHU	insulin precursor
41	268.5	33.7	51	1	INMSSP	insulin - Egyptian
42	268.5	33.7	191	2	A60625	somatotropin - gre
43	267.5	33.6	51	2	A59151	insulin precursor
44	266.5	33.4	105	1	IPBO	insulin precursor
45	265.5	33.3	110	2	I48166	insulin precursor

ALIGNMENTS

RESULT 1

STHU

somatotropin 1 precursor [validated] - human

N;Alternate names: growth hormone 1; hGH-N; pituitary somatotropin

N;Contains: growth hormone 5K peptide; somatotropin 1, long form; somatotropin 1, short form

C;Species: Homo sapiens (man)

C;Date: 24-Apr-1984 #sequence_revision 10-Feb-1995 #text_change 08-Dec-2000

C;Accession: A93731; A32435; A93694; A94247; A90051; A93397; A93778; A91764; A90217; A92311; A61466; S09685; I84549; A01510

R;DeNoto, F.M.; Moore, D.D.; Goodman, H.M.

Nucleic Acids Res. 9, 3719-3730, 1981

A;Title: Human growth hormone DNA sequence and mRNA structure: possible alternative splicing.

A;Reference number: A93731; MUID:82014939; PMID:6269091

A;Accession: A93731

A;Molecule type: DNA

A;Residues: 1-217 <DEN>

A;Cross-references: GB:V00520

A;Note: the 20K short form somatotropin lacks residues 58-72 (32-46 in the active hormone) as the result of splicing at the alternate junction of the second intron during mRNA processing
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.H.
Genomics 4, 479-497, 1989
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A;Reference number: A32435; MUID:89307277; PMID:2744760
A;Accession: A32435
A;Molecule type: DNA
A;Residues: 1-217 <CHE>
A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52549.1; PID:g183149
R;Roskam, W.; Rougeon, F.
Nucleic Acids Res. 7, 305-320, 1979
A;Title: Molecular cloning and nucleotide sequence of the human growth hormone structural gene.
A;Reference number: A93694; MUID:80034477; PMID:386281
A;Accession: A93694
A;Molecule type: mRNA
A;Residues: 1-217 <ROS>
A;Cross-references: GB:V00519
A;Note: 35-Pro was also found
R;Martial, J.A.; Hallewell, R.A.; Baxter, J.D.; Goodman, H.M.
Science 205, 602-607, 1979
A;Title: Human growth hormone: complementary DNA cloning and expression in bacteria.
A;Reference number: A94247; MUID:79203293; PMID:377496
A;Accession: A94247
A;Molecule type: mRNA
A;Residues: 1-217 <MAR>
R;Li, C.H.; Dixon, J.S.; Liu, W.K.
Arch. Biochem. Biophys. 133, 70-91, 1969
A;Title: Human pituitary growth hormone. XIX. The primary structure of the hormone.
A;Reference number: A90048; MUID:69289202; PMID:5810834
A;Contents: annotation
R;Li, C.H.; Dixon, J.S.
Arch. Biochem. Biophys. 146, 233-236, 1971
A;Title: Human pituitary growth hormone. XXXII. The primary structure of the hormone: revision.
A;Reference number: A90051; MUID:72143935; PMID:5144027
A;Accession: A90051
A;Molecule type: protein
A;Residues: 27-94;96-217 <LIC>
R;Niall, H.D.
Nature New Biol. 230, 90-91, 1971
A;Title: Revised primary structure for human growth hormone.
A;Reference number: A93397; MUID:71139765; PMID:5279046
A;Accession: A93397
A;Molecule type: protein
A;Residues: 27-51 <NIA>
R;Niall, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.
Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971
A;Title: Sequences of pituitary and placental lactogenic and growth hormones: evolution from a primordial peptide by gene reduplication.
A;Reference number: A93778; MUID:71153968; PMID:5279528

A;Accession: A93778
 A;Molecule type: protein
 A;Residues: 119-120;157-159 <NI2>
 R;Niall, H.D.
 in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin,
 Griffiths, K., ed., pp.13-20, Alpha Omega Alpha Press, Cardiff, Wales, 1972
 A;Title: The chemistry of the human lactogenic hormones.
 A;Reference number: A94427
 A;Contents: annotation; somatotropin revision
 R;Bewley, T.A.; Dixon, J.S.; Li, C.H.
 Int. J. Pept. Protein Res. 4, 281-287, 1972
 A;Title: Sequence comparison of human pituitary growth hormone, human chorionic
 somatomammotropin, and ovine pituitary growth and lactogenic hormones.
 A;Reference number: A91764; MUID:73092028; PMID:4675454
 A;Accession: A91764
 A;Molecule type: protein
 A;Residues: 27-217 <BEW>
 R;Lewis, U.J.; Bonewald, L.F.; Lewis, L.J.
 Biochem. Biophys. Res. Commun. 92, 511-516, 1980
 A;Title: The 20,000-dalton variant of human growth hormone: location of the
 amino acid deletions.
 A;Reference number: A90217; MUID:80130196; PMID:7356479
 A;Contents: somatotropin, 20K short variant
 A;Accession: A90217
 A;Molecule type: protein
 A;Residues: 46-57;73-80 <LEW>
 R;Chapman, G.E.; Rogers, K.M.; Brittain, T.; Bradshaw, R.A.; Bates, O.J.;
 Turner, C.; Cary, P.D.; Crane-Robinson, C.
 J. Biol. Chem. 256, 2395-2401, 1981
 A;Title: The 20,000 molecular weight variant of human growth hormone.
 Preparation and some physical and chemical properties.
 A;Reference number: A92311; MUID:81117361; PMID:7462247
 A;Contents: somatotropin, 20K short variant
 A;Accession: A92311
 A;Molecule type: protein
 A;Residues: 27-57;73-79 <CHA>
 R;Singh, R.N.P.; Seavey, B.K.; Lewis, L.J.; Lewis, U.J.
 J. Protein Chem. 2, 425-436, 1983
 A;Title: Human growth hormone peptide 1-43: isolation from pituitary glands.
 A;Reference number: A61466
 A;Accession: A61466
 A;Molecule type: protein
 A;Residues: 27-69 <SIN>
 A;Note: growth hormone 5K peptide has insulin potentiating activity; its
 physiological production is uncertain
 R;Robson, V.M.J.; Rae, I.D.; NG, F.
 Biol. Chem. Hoppe-Seyler 371, 423-431, 1990
 A;Title: Identification of the aspartimide structure in a previously-reported
 peptide.
 A;Reference number: S09685; MUID:90334745; PMID:2378679
 A;Accession: S09685
 A;Molecule type: protein
 A;Residues: 27-34,'L',36-47 <ROB>
 R;de Vos, A.M.; Ultsch, M.; Kossiakoff, A.A.
 Science 255, 306-312, 1992
 A;Title: Human growth hormone and extracellular domain of its receptor: crystal
 structure of the complex.

A;Reference number: A41728; MUID:92196577; PMID:1549776
A;Contents: annotation; X-ray crystallography, 2.8 angstroms
A;Note: the structure of the complex with growth hormone receptor is described
R;Gray, G.L.; Baldrige, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.
Gene 39, 247-254, 1985
A;Title: Periplasmic production of correctly processed human growth hormone in
Escherichia coli: natural and bacterial signal sequences are interchangeable.
A;Reference number: I41126; MUID:86137393; PMID:3912261
A;Accession: I84549
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-26 <RES>
A;Cross-references: GB:M14398; NID:g183158; PIDN:AAA52554.1; PID:g183159
C;Comment: The gene for this hormone is transcribed only in somatotrophic cells
of the anterior pituitary.
C;Comment: About 90% of somatotropin is the 22K long form.
C;Genetics:
A;Gene: GDB:GH1
A;Cross-references: GDB:119982; OMIM:139250
A;Map position: 17q23.1-17q23.3
A;Introns: 4/1; 57/3; 97/3; 152/3
C;Superfamily: prolactin
C;Keywords: alternative splicing; hormone; pituitary
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-217/Product: somatotropin 1, long form #status experimental <SOL>
F;27-69/Product: growth hormone 5K peptide #status experimental <5KP>
F;27-57,73-217/Product: somatotropin 1, short form #status experimental <SOS>
F;79-191,208-215/Disulfide bonds: #status experimental

Query Match 57.8%; Score 461; DB 1; Length 217;
Best Local Similarity 70.3%; Pred. No. 7.6e-38;
Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

```

QY      2  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
      |||
Db      27  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT 86

QY      62  PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
      |||
Db      87  PSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLEE 145

QY      112 ALYLVCG--ERGFFYTPKTRGIVEQ 134
      : : | | | :|:| | :|
Db      146 GIQTLMGRLEDG---SPRTGQIFKQ 167

```

RESULT 2

I67410

somatotropin - rhesus macaque

N;Alternate names: growth hormone

C;Species: Macaca mulatta (rhesus macaque)

C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999

C;Accession: I67410; A05094

R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.

Endocrinology 133, 1744-1752, 1993

A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.

A;Reference number: I53267; MUID:94008724; PMID:8404617

A;Accession: I67410

A;Status: translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 1-217 <RES>

A;Cross-references: GB:L16556; NID:g293114; PIDN:AAA18842.1; PID:g293115

R;Li, C.H.; Chung, D.; Lahm, H.W.; Stein, S.

Arch. Biochem. Biophys. 245, 287-291, 1986

A;Title: The primary structure of monkey pituitary growth hormone.

A;Reference number: A05094; MUID:86129460; PMID:3080959

A;Accession: A05094

A;Molecule type: protein

A;Residues: 27-99,'Q',101-178,'D',180-217 <LIC>

A;Note: the monkey species is not identified in the reference

R;Raben, M.S.

Science 125, 883-884, 1957

A;Title: Preparation of growth hormone from pituitaries of man and monkey.

A;Reference number: A44774

A;Contents: annotation; identification of source organism

C;Superfamily: prolactin

Query Match 57.7%; Score 460; DB 2; Length 217;
Best Local Similarity 98.9%; Pred. No. 9.5e-38;
Matches 90; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
|||||
Db 27 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 86

Qy 62 PSNREETQQKSNLELLLRISLLLIQSWLEPVQ 92
|||||
Db 87 PSNREETQQKSNLELLLRISLLLIQSWLEPVQ 117

RESULT 3

STHUV

somatotropin 2 precursor - human

N;Alternate names: growth hormone 2; growth hormone variant; hGH-V; placental somatotropin

N;Contains: somatotropin 2, long splice form; somatotropin 2, short splice form

C;Species: Homo sapiens (man)

C;Date: 17-Dec-1982 #sequence_revision 10-Feb-1995 #text_change 21-Jul-2000

C;Accession: D32435; B28072; A01511; I52104; A60711

R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.H.

Genomics 4, 479-497, 1989

A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.

A;Reference number: A32435; MUID:89307277; PMID:2744760

A;Accession: D32435

A;Molecule type: DNA

A;Residues: 1-217 <CHE>

A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52552.1; PID:g183152

R;Cooke, N.E.; Ray, J.; Emery, J.G.; Liehaber, S.A.


```

Qy      62 PSNREETQQKSNLELLRLISLLLIQSWLEPVQL-----GTGPRFVNQHL 104
      |||| :|||||
Db      87 PSNRVKTQQKSNLELLRLISLLLIQSWLEPVQLLRSVFANSLVYGASDSNVYRHL 140

```

RESULT 4

STHUV2

somatotropin 2 precursor, splice form 2 - human

N;Alternate names: growth hormone variant-2; placental somatotropin form 2

C;Species: Homo sapiens (man)

C;Date: 30-Sep-1989 #sequence_revision 10-Feb-1995 #text_change 02-Sep-1997

C;Accession: A28072

R;Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhaver, S.A.

J. Biol. Chem. 263, 9001-9006, 1988

A;Title: Two distinct species of human growth hormone-variant mRNA in the human placenta predict the expression of novel growth hormone proteins.

A;Reference number: A92725; MUID:88243769; PMID:3379057

A;Accession: A28072

A;Molecule type: mRNA

A;Residues: 1-256 <COO>

A;Note: an alternative splice junction for intron 4 is used

C;Genetics:

A;Gene: GDB:GH2

A;Cross-references: GDB:119983; OMIM:139240

A;Map position: 17q22-17q24

A;Introns: 4/1; 57/3; 97/3; 152/3

C;Superfamily: prolactin

C;Keywords: alternative splicing; hormone; placenta

F;1-26/Domain: signal sequence #status predicted <SIG>

F;27-256/Product: somatotropin 2 splice form 2 #status predicted <MAT>

```

Query Match          53.5%;  Score 426.5;  DB 1;  Length 256;
Best Local Similarity 78.1%;  Pred. No. 2.3e-34;
Matches   89;  Conservative   4;  Mismatches  10;  Indels   11;  Gaps    1;

```

```

Qy      2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
      |||||
Db      27 FPTIPLSRLFDNAMLRRRLYLQLAYDITYQEFEEAYILKEQKYSFLQNPQTSLCFSESIPT 86

Qy      62 PSNREETQQKSNLELLRLISLLLIQSWLEPVQL-----GTGPRFVNQHL 104
      |||| :|||||
Db      87 PSNRVKTQQKSNLELLRLISLLLIQSWLEPVQLLRSVFANSLVYGASDSNVYRHL 140

```

RESULT 5

I67409

chorionic somatomammotropin-3 - rhesus macaque

C;Species: Macaca mulatta (rhesus macaque)

C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999

C;Accession: I67409

R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.

Endocrinology 133, 1744-1752, 1993

A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.

A;Reference number: I53267; MUID:94008724; PMID:8404617

A;Accession: I67409

A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <RES>
A;Cross-references: GB:L16554; NID:g293112; PIDN:AAA18841.1; PID:g293113
C;Superfamily: prolactin

Query Match 51.1%; Score 407.5; DB 2; Length 217;
Best Local Similarity 71.9%; Pred. No. 1.4e-32;
Matches 82; Conservative 12; Mismatches 19; Indels 1; Gaps 1;

Qy 3 PTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTP 62
|::||||||| |:|||||||||||||||: ||||:|:| : ||| | |||||
Db 28 PSVPLSRLFDNIMMQAHLHQLAFDITYQEFEKTYIPKEKKHSLMGNPQASFCFSESIPTP 87

Qy 63 SNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGSHLVEALYLV 116
||||||||||||||||||||||| | | | : | : :| |:
Db 88 SNREETQQKSNLELLRISLLLIQSWLEPVQL-LGSVFANNLVYGTSES DAYDLL 140

RESULT 6

I67411
somatotropin - rhesus macaque
N;Alternate names: growth hormone
C;Species: Macaca mulatta (rhesus macaque)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C;Accession: I67411
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.
A;Reference number: I53267; MUID:94008724; PMID:8404617
A;Accession: I67411
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-217 <RES>
A;Cross-references: GB:L16555; NID:g293116; PIDN:AAA20180.1; PID:g293117
C;Superfamily: prolactin

Query Match 50.8%; Score 405; DB 2; Length 217;
Best Local Similarity 67.7%; Pred. No. 2.4e-32;
Matches 86; Conservative 9; Mismatches 18; Indels 14; Gaps 2;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
||||| |: |: ||| |:||||| :|||||||||||||||:||||| |||||
Db 27 FPTIPLSWLFNTAVFRAHHLHKLAFDITYPKFEEAYIPKEQKYSFLRNPQTSLCFSESIPT 86

Qy 62 PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGSHLVEA-----LY 114
|||:||||||||||| ||||||||||||| : : :||| ||
Db 87 PSNKEETQQKSNLELLHISLLLIQSWLEPVQF-----LRSVFANHLVHTNSNFDIYLY 139

Qy 115 LVCGERG 121
| | |
Db 140 LKKLEEG 146

RESULT 7

Qy 63 SNREETQQKSNLELLLRISLLLIQSWLEPVQ 92
 || |||||
 Db 88 SNLEETQQKSNLELLLRISLLLIQSWLEPVQ 117

RESULT 9

LCHUC

choriomammotropin A precursor [validated] - human

N;Alternate names: chorionic somatomammotropin 1; placental lactogen

C;Species: Homo sapiens (man)

C;Date: 23-Oct-1981 #sequence_revision 23-Oct-1981 #text_change 08-Dec-2000

C;Accession: C32435; A94422; I52342; A93833; A93192; A90054; A94427; A61283; I55229; I59658; A01512

R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.H.

Genomics 4, 479-497, 1989

A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.

A;Reference number: A32435; MUID:89307277; PMID:2744760

A;Accession: C32435

A;Molecule type: DNA

A;Residues: 1-217 <CHE>

A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52551.1; PID:g183151

R;Goodman, H.M.; DeNoto, F.; Fiddes, J.C.; Hallewell, R.A.; Page, G.S.; Smith, S.; Tischer, E.

in Mobilization and Reassembly of Genetic Information, Scott, W.A., Werner, R., Joseph, D.R., and Schultz, J., eds., pp.155-179, Academic Press, New York, 1980

A;Reference number: A94422

A;Accession: A94422

A;Molecule type: mRNA

A;Residues: 1-217 <GOO>

R;Tanaka, M.; Masuda, N.; Watahiki, M.; Yamakawa, M.; Shimizu, K.; Nagai, J.; Nakashima, K.

Biochem. Int. 16, 287-292, 1988

A;Title: cDNA cloning of human chorionic somatomammotropin-1 mRNA whose transcription was initiated at the 5' region of the TATA box.

A;Reference number: I52342; MUID:88209096; PMID:2835050

A;Accession: I52342

A;Status: translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 1-3 <TAN>

A;Cross-references: GB:M35419; NID:g506822

R;Sherwood, L.M.; Burstein, Y.; Schechter, I.

Proc. Natl. Acad. Sci. U.S.A. 76, 3819-3823, 1979

A;Title: Primary structure of the NH-2-terminal extra piece of the precursor to human placental lactogen.

A;Reference number: A93833; MUID:80034970; PMID:291043

A;Accession: A93833

A;Molecule type: protein

A;Residues: 1,3-26 <SHE>

A;Experimental source: placenta

R;Shine, J.; Seeburg, P.H.; Martial, J.A.; Baxter, J.D.; Goodman, H.M.

Nature 270, 494-499, 1977

A;Title: Construction and analysis of recombinant DNA for human chorionic somatomammotropin.

A;Reference number: A93192; MUID:78071761; PMID:593368

A;Accession: A93192
A;Molecule type: DNA
A;Residues: 50-217 <SHI>
A;Experimental source: placenta
R;Li, C.H.; Dixon, J.S.; Chung, D.
Arch. Biochem. Biophys. 155, 95-110, 1973
A;Title: Amino acid sequence of human chorionic somatomammotropin.
A;Reference number: A90054; MUID:73201971; PMID:4712450
A;Accession: A90054
A;Molecule type: protein
A;Residues: 27-217 <LIC>
A;Experimental source: placenta
R;Niall, H.D.
in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin,
Griffiths, K., ed., pp.13-20, Alpha Omega Alpha Press, Cardiff, Wales, 1972
A;Title: The chemistry of the human lactogenic hormones.
A;Reference number: A94427
A;Accession: A94427
A;Molecule type: protein
A;Residues: 27-217 <NIA>
A;Experimental source: placenta
R;Nic A Bhaird, N.; Tipton, K.F.
Biochem. Soc. Trans. 19, 20S, 1991
A;Title: Catechol-O-methyltransferase from human placenta: purification and some
properties.
A;Reference number: A61283; MUID:91244006; PMID:2037148
A;Accession: A61283
A;Molecule type: protein
A;Residues: 27-46 <NIC>
A;Note: choriomammotropin apparently copurified with placental catechol-O-
methyltransferase
R;Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.
Nature New Biol. 233, 59-61, 1971
A;Title: Amino-acid sequence of human placental lactogen.
A;Reference number: A93401; MUID:72016313; PMID:5286363
A;Contents: annotation
R;Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.
Nature New Biol. 235, 64, 1972
A;Reference number: A93405
A;Contents: annotation
R;Schneider, A.B.; Kowalski, K.; Russell, J.; Sherwood, L.M.
J. Biol. Chem. 254, 3782-3787, 1979
A;Title: Identification of the interchain disulfide bonds of dimeric human
placental lactogen.
A;Reference number: A92251; MUID:79173081; PMID:438159
A;Contents: annotation; dimeric disulfide bonds
R;Selby, M.J.; Barta, A.; Baxter, J.D.; Bell, G.I.; Eberhardt, N.L.
J. Biol. Chem. 259, 13131-13138, 1984
A;Title: Analysis of a major human chorionic somatomammotropin gene. Evidence
for two functional promoter elements.
A;Reference number: I55229; MUID:85030426; PMID:6208192
A;Accession: I55229
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-217 <RES>
A;Cross-references: GB:K02401; NID:g181120; PIDN:AAA52115.1; PID:g181121
R;Seeburg, P.H.; Shine, J.; Martial, J.A.; Ullrich, A.; Goodman, H.

Trans. Assoc. Am. Physicians 90, 109-116, 1977
 A;Title: Nucleotide sequence of a human gene coding for a polypeptide hormone.
 A;Reference number: I59658; MUID:78160787; PMID:611657
 A;Accession: I59658
 A;Status: translated from GB/EMBL/DDBJ
 A;Molecule type: mRNA
 A;Residues: 160-217 <RE2>
 A;Cross-references: GB:M25118; NID:g181124; PIDN:AAA35721.1; PID:g181125
 C;Genetics:
 A;Gene: GDB:CSH1
 A;Cross-references: GDB:119084; OMIM:150200
 A;Map position: 17q22-17q24
 A;Introns: 4/1; 57/3; 97/3; 152/3
 C;Superfamily: prolactin
 C;Keywords: hormone; placenta
 F;1-26/Domain: signal sequence #status experimental <SIG>
 F;27-217/Product: choriomammotropin A #status experimental <MAT>
 F;79-191/Disulfide bonds: #status experimental
 F;208-215/Disulfide bonds: (in monomeric form) #status experimental
 F;208/Disulfide bonds: interchain (to 215 in dimeric form) #status experimental
 F;215/Disulfide bonds: interchain (to 208 in dimeric form) #status experimental

Query Match 47.8%; Score 381; DB 1; Length 217;
 Best Local Similarity 82.0%; Pred. No. 5.5e-30;
 Matches 73; Conservative 8; Mismatches 8; Indels 0; Gaps 0;

QY 4 TIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTPS 63
 |:|||||:||||| ||| ||||| |||||:||||| : ||| ||:|||||
 Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFETYIPKDQKYSFLHDSQTSFCFSDSIPTPS 88
 QY 64 NREETQQKSNLELLRISLLLIQSWLEPVQ 92
 | |||||:|||||:
 Db 89 NMEETQQKSNLELLRISLLLIQSWLEPVR 117

RESULT 10

E32435
 choriomammotropin B precursor - human
 N;Alternate names: chorionic somatomammotropin 2
 C;Species: Homo sapiens (man)
 C;Date: 29-Dec-1989 #sequence_revision 29-Dec-1989 #text_change 16-Jul-1999
 C;Accession: E32435
 R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.H.
 Genomics 4, 479-497, 1989
 A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
 A;Reference number: A32435; MUID:89307277; PMID:2744760
 A;Accession: E32435
 A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 1-217 <CHE>
 A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52553.1; PID:g183153
 C;Genetics:
 A;Gene: GDB:CSH2
 A;Cross-references: GDB:119813; OMIM:118820
 A;Map position: 17q22-17q24

```

Query Match          47.8%;  Score 381;  DB 2;  Length 217;
Best Local Similarity 82.0%;  Pred. No. 5.5e-30;
Matches    73;  Conservative    8;  Mismatches    8;  Indels    0;  Gaps    0;

Qy          4  TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSES IPTPS 63
|:|||||:|:| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          29  TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEEYIIPKDKYSFLHDSQTSFCFSDSIPTPS 88

Qy          64  NREETQQKSNLELLLRISLLLIQSWLEPVQ 92
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db          89  NMEETQQKSNLELLLRISLLLIESWLEPVR 117

```

```
Qy      4 TIPLSRLFDNAMLRAHRLHQLAFTDYQEFEAYIPKEQKYSFLQNPTSLSFSESIPTPS 63  
       | : ||||| : || : || | ||||| ||| : ||||| : || | || : |||||  
Db     29 TVPLSRLFDHAMLQAHAHQQLAIDTYQEFEETIYPKDQKYSFLHDSQTSCFSDSIPTPS 88  
  
Qy     64 NREETQQKSNLELLRISLLLIQSWLEP 90  
       | ||||||||| : ||| : |||||  
Db    89 NMEETQQKSNLELLRL-LLLIESWLEP 114
```

Endocrinology 129, 2965-2971, 1991

A;Title: Sequence and expression of hamster prolactin and growth hormone messenger RNAs.

A;Reference number: A49159; MUID:92063850; PMID:1954881

A;Accession: B49159

A;Status: preliminary

A;Molecule type: mRNA

A;Residues: 1-216 <SOU>

A;Cross-references: GB:S66299; NID:g239355; PIDN:AAB20368.1; PID:g239356

A;Note: sequence extracted from NCBI backbone (NCBIN:66299, NCBIP:66300)

C;Superfamily: prolactin

Query Match 39.0%; Score 310.5; DB 2; Length 216;
Best Local Similarity 67.0%; Pred. No. 4.6e-23;
Matches 61; Conservative 13; Mismatches 16; Indels 1; Gaps 1;

Qy 2 FPTIPLSRLEFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
|| :||| || ||:|||| ||||| |||:|||| ||||: |:|| :|| ||: |||:||
Db 27 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRY- IQNAQTAFCFSETIPA 85

Qy 62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
|: :|| ||:|:|||| ||||| |||
Db 86 PTGKEEAQQRSDMELLRFSLLLIQSWLGPVQ 116

RESULT 13

PN0140

somatotropin - sei whale

N;Alternate names: growth hormone

C;Species: Balaenoptera borealis (sei whale)

C;Date: 07-May-1993 #sequence_revision 07-May-1993 #text_change 07-May-1999

C;Accession: PN0140

R;Yudaev, N.A.; Pankov, Y.A.; Bulatov, A.A.; Osipova, T.A.

Biokhimiia 47, 1059-1069, 1982

A;Title: Amino acid sequence of seiwhale somatotropin.

A;Reference number: PN0140; MUID:83000569; PMID:7115813

A;Accession: PN0140

A;Molecule type: protein

A;Residues: 1-190 <YUD>

A;Note: article in Russian with English abstract

C;Superfamily: prolactin

C;Keywords: growth factor; hormone

F;52-163,180-188/Disulfide bonds: #status predicted

Query Match 38.6%; Score 307.5; DB 2; Length 190;
Best Local Similarity 67.0%; Pred. No. 7.8e-23;
Matches 61; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

Qy 2 FPTIPLSRLEFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
|| :||| || ||:|||| ||:|| |||:|||| ||||: |:| |||| |:| ||| |||
Db 1 FPAMPLSSLFANAVLRAQHLHELAAADTYKEFERAYIPEGQRY-FLQNAQSTGCFSEVIPT 59

Qy 62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
|:|:| ||:|:|||| ||||| |||
Db 60 PANKDEAQQRSDVELLRFSLLLIQSWLGPVQ 90

RESULT 14

STHO
 somatotropin - horse
 N;Alternate names: growth hormone
 C;Species: Equus caballus (domestic horse)
 C;Date: 13-Jul-1981 #sequence_revision 13-Jul-1981 #text_change 23-Aug-1996
 C;Accession: A91772; A91395; A91383; A90240; A01514
 R;Zakin, M.M.; Poskus, E.; Langton, A.A.; Ferrara, P.; Santome, J.A.; Dellacha, J.M.; Paladini, A.C.
 Int. J. Pept. Protein Res. 8, 435-444, 1976
 A;Title: Primary structure of equine growth hormone.
 A;Reference number: A91772; MUID:77005410; PMID:965151
 A;Accession: A91772
 A;Molecule type: protein
 A;Residues: 1-190 <ZAK>
 R;Zakin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.
 FEBS Lett. 34, 353-355, 1973
 A;Title: The amino acid sequence of equine growth hormone.
 A;Reference number: A91395; MUID:74020362; PMID:4747849
 A;Accession: A91395
 A;Molecule type: protein
 A;Residues: 1-190 <ZA2>
 R;Zakin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.
 FEBS Lett. 25, 77-82, 1972
 A;Title: Amino acid sequences around the cystine residues in equine growth hormone.
 A;Reference number: A91383
 A;Accession: A91383
 A;Molecule type: protein
 A;Residues: 42-69;157-190 <ZA3>
 R;Oliver, L.; Hartree, A.S.
 Biochem. J. 109, 19-24, 1968
 A;Title: Amino acid sequences around the cystine residues in horse growth hormone.
 A;Reference number: A90240; MUID:68368390; PMID:4876100
 A;Accession: A90240
 A;Molecule type: protein
 A;Residues: 176-190 <OLI>
 C;Superfamily: prolactin
 C;Keywords: hormone; pituitary
 F;52-163,180-188/Disulfide bonds: #status experimental

Query Match 38.5%; Score 306.5; DB 1; Length 190;
 Best Local Similarity 65.2%; Pred. No. 9.8e-23;
 Matches 60; Conservative 14; Mismatches 17; Indels 1; Gaps 1;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 || :||| || ||:|||| ||||| |||:|||| ||||: ||:| :|| | : |||:||
 Db 1 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYIS-IQNAQAACFCFSETIPA 59
 Qy 62 PSNREETQQKSNLELLLRISLLLIQSWLEPVQL 93
 |: ::| ||:|::|||| ||||| ||||
 Db 60 PTGKDEAQQRSDMELLRFSLLLLIQSWLGPVQL 91

RESULT 15
 STMS
 somatotropin precursor - mouse

N;Alternate names: growth hormone
 C;Species: Mus musculus (house mouse)
 C;Date: 30-Sep-1987 #sequence_revision 30-Sep-1987 #text_change 28-May-1999
 C;Accession: B23911
 R;Linzer, D.I.H.; Talamantes, F.
 J. Biol. Chem. 260, 9574-9579, 1985
 A;Title: Nucleotide sequence of mouse prolactin and growth hormone mRNAs and expression of these mRNAs during pregnancy.
 A;Reference number: A92548; MUID:85261358; PMID:2991252
 A;Accession: B23911
 A;Molecule type: mRNA
 A;Residues: 1-216 <LIN>
 A;Cross-references: GB:X02891; GB:K03232; NID:g51067; PIDN:CAA26650.1; PID:g51068
 C;Superfamily: prolactin
 C;Keywords: anterior pituitary; growth factor; hormone
 F;1-26/Domain: signal sequence #status predicted <SIG>
 F;27-216/Product: somatotropin #status predicted <STN>
 F;78-189,206-214/Disulfide bonds: #status predicted

Query Match 38.2%; Score 304.5; DB 1; Length 216;
 Best Local Similarity 64.8%; Pred. No. 1.8e-22;
 Matches 59; Conservative 14; Mismatches 17; Indels 1; Gaps 1;

```

Qy      2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
      || :||| || ||:||| ||||| |||:||| ||||: |:|| :|| | : |||:||
Db      27 FPAMPLSSLFSNAVLRAQHLHQLAADTYKEFERAYIPEGQRYIS-IQNAQAACFCSETIPA 85

Qy      62 PSNREETQQKSNLELLLRISLLLIQSWLEPVQ 92
      |: :|| ||:::|||| ||||| |||
Db      86 PTGKEEAQQRTDMELLRFSLLLIQSWLGPVQ 116
  
```

Search completed: July 15, 2004, 16:37:34
 Job time : 17.9577 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: July 15, 2004, 16:29:50 ; Search time 51.2127 Seconds
(without alignments)
924.141 Million cell updates/sec

Title: US-09-423-100-7
Perfect score: 797
Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....IVEQCCTSICSLYQLENYCN 150

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1017041 seqs, 315518202 residues

Total number of hits satisfying chosen parameters: 1017041

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_25:*
1: sp_archaea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriap:*
17: sp_archeap:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

%
Result Query
No. Score Match Length DB ID Description

1	436	54.7	217	6	Q8WNE0	Q8wne0	ateles geof
2	427.5	53.6	245	4	O14644	O14644	homo sapien
3	407.5	51.1	217	6	Q07369	Q07369	macaca mula
4	399	50.1	184	6	Q866T9	Q866t9	pan troglod
5	397	49.8	217	6	Q866U1	Q866u1	pan troglod
6	396	49.7	212	6	Q07368	Q07368	macaca mula
7	396	49.7	217	6	Q07367	Q07367	macaca mula
8	385	48.3	217	6	Q866T8	Q866t8	pan troglod
9	381	47.8	217	4	Q14407	Q14407	homo sapien
10	370	46.4	217	6	Q866U0	Q866u0	pan troglod
11	348	43.7	217	6	Q8WND9	Q8wnd9	ateles geof
12	341	42.8	202	4	O14643	O14643	homo sapien
13	322.5	40.5	217	6	Q8MI74	Q8mi74	callithrix
14	306.5	38.5	216	11	O70615	O70615	spalax leuc
15	301.5	37.8	216	6	Q8MI73	Q8mi73	delphinus d
16	301.5	37.8	216	6	Q8HYE5	Q8hye5	ailuropoda
17	301.5	37.8	216	6	Q7YQB8	Q7yqb8	hippopotamu
18	298.5	37.5	216	11	Q9R2C3	Q9r2c3	mus musculu
19	297.5	37.3	204	6	Q95205	Q95205	ovis aries
20	297.5	37.3	216	6	Q7YRR6	Q7yrr6	camelus dro
21	297.5	37.3	216	11	Q9JKM4	Q9jkm4	cavia porce
22	297	37.3	217	6	Q8MI75	Q8mi75	callithrix
23	290.5	36.4	192	6	Q9TU21	Q9tu21	capra hircu
24	289.5	36.3	192	6	Q9TQW9	Q9tqw9	bos indicus
25	289.5	36.3	217	6	Q7YQD2	Q7yqd2	giraffa cam
26	287.5	36.1	190	11	Q9JKG0	Q9jkg0	cavia porce
27	286.5	35.9	178	6	Q95MJ5	Q95mj5	tarsius ban
28	286.5	35.9	217	6	Q864S7	Q864s7	bos mutus g
29	285.5	35.8	217	6	Q9BEC0	Q9bec0	tragulus ja
30	285.5	35.8	217	6	Q9BEB9	Q9beb9	tragulus ja
31	285	35.8	167	4	P78451	P78451	homo sapien
32	283.5	35.6	178	6	Q95MJ6	Q95mj6	tarsius syr
33	280.5	35.2	217	6	Q28957	Q28957	sus scrofa
34	271.5	34.1	110	6	Q8HXV2	Q8h xv2	pongo pygma
35	265.5	33.3	143	6	Q95240	Q95240	canis famil
36	261.5	32.8	218	13	Q9PU72	Q9pu72	cynops pyrr
37	261	32.7	216	13	Q804M1	Q804m1	anser anser
38	254	31.9	110	6	Q8WNW6	Q8wnw6	felis silve
39	246.5	30.9	145	6	Q9BDR4	Q9bdr4	galago cras
40	239.5	30.1	215	13	Q7ZU47	Q7zu47	rana catesb
41	234	29.4	199	4	Q14406	Q14406	homo sapien
42	233.5	29.3	195	13	Q91386	Q91386	amia calva
43	229.5	28.8	217	13	Q7T1C3	Q7t1c3	ambystoma b
44	224.5	28.2	106	13	Q9I8Q7	Q9i8q7	rana pipien
45	201.5	25.3	110	13	Q98TA8	Q98ta8	pantodon bu

ALIGNMENTS

RESULT 1

Q8WNE0

ID Q8WNE0 PRELIMINARY; PRT; 217 AA.

AC Q8WNE0;

DT 01-MAR-2002 (TrEMBLrel. 20, Created)

DT 01-MAR-2002 (TrEMBLrel. 20, Last sequence update)

DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)

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DE Growth hormone.
GN GH-N.
OS Ateles geoffroyi (Black-handed spider monkey).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Atelinae; Ateles.
OX NCBI_TaxID=9509;
RN [1]
RP SEQUENCE FROM N.A.
RA Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RT "Independent duplication of the growth hormone gene in three
RT Anthropoidean lineages.";
RL Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AF374234; AAL72286.1; -.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro; IPR001400; Somatotropin.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 217 AA; 24894 MW; 425829FF41EEAAE6 CRC64;

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Qy      2  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT  61
      |||
Db     27  FPTIPLSRLLDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPT  86
      |||
Qy     62  PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCG-----SHLVE  111
      |:::|||||
Db     87  PASKKETQQKSNLELLRISLLLIQSWFEPVQF-LRSVFANSLLYGVSDSDVYEYLLKDLLE  145
      |
Qy    112  ALYLVCG--ERGFFYTPKTRGIVEQ  134
      :  : | | | :|:| | |
Db   146  GIOTLMGRLEDG---SPOTGEIFRO  167

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RESULT 2
014644


```
DR      HSSP; P01241; 1AXI.
DR      GO; GO:0005576; C:extracellular; IEA.
DR      GO; GO:0005179; F:hormone activity; IEA.
DR      InterPro; IPR001400; Somatotropin.
DR      Pfam; PF00103; hormone; 1.
DR      PRINTS; PR00836; SOMATOTROPIN.
DR      PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR      PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ      SEQUENCE      217 AA;  24874 MW;  F1EB6AFDBBA1B185 CRC64;
```

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Qy      3 PTIPLSRLFDNAMLRAHRLHQLAFTDYQEFE EAYIPKEQKYSFLQNPQTSLSFSESIPTP 62
       |::| ||||| | :::| ||||| ||||| |: ||||| ::| : || | ||||| |
Db     28 PSVPLSRLFDNIMQAHRHLHQLAFTDYQEFEKYTIYPKEKKHSLMGNPQASFCFSESIPTP 87

Qy     63 SNREETQQKS NLELLRIS LLLIQSWLEPVQLGTGPRFVNQHLCGSHLVEALYLV 116
       ||||| ||||| ||||| ||||| ||||| | | | : |: :| |:
Db    88 SNREETQQKS NLELLRIS LLLIQSWLEPVQL-LGSVFANNLVYGTSES DAYDLL 140
```

Q866T9

Query Match 50.1%; Score 399; DB 6; Length 184;
Best Local Similarity 84.6%; Pred. No. 7.5e-35;
Matches 77; Conservative 7; Mismatches 7; Indels 0; Gaps 0;

Qy 62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
 ||| |||||:|||||:
 Db 87 PSNMEETQQKSNLELLRISLLLIQSWLEPVQ 117

RESULT 5

Q866U1

ID Q866U1 PRELIMINARY; PRT; 217 AA.
 AC Q866U1;
 DT 01-JUN-2003 (TrEMBLrel. 24, Created)
 DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
 DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
 DE Placental lactogen PL-A.
 OS Pan troglodytes (Chimpanzee).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
 OX NCBI_TaxID=9598;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Revol A., Esquivel D.E., Barrera H.S.;
 RT "The GH-PL locus a hot-point between human and chimpanzee genomes."
 RL Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
 DR EMBL; AY146625; AAN84505.1; -.
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005179; F:hormone activity; IEA.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 SQ SEQUENCE 217 AA; 25081 MW; C74B6262D8A93060 CRC64;

Query Match 49.8%; Score 397; DB 6; Length 217;
 Best Local Similarity 87.6%; Pred. No. 1.5e-34;
 Matches 78; Conservative 6; Mismatches 5; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTPS 63
 |:|||||:||||:|:| ||||| ||||| ||||| ||||| ||||| |||||
 Db 29 TVPLSRLFDHAMLQAHAYQLAIDTYQEFEEAYILKEQKYSFLQNPQTSLCFSESIPTPS 88
 Qy 64 NREETQQKSNLELLRISLLLIQSWLEPVQ 92
 | |||||:|||||:
 Db 89 NMEETQQKSNLELLRISLLLIQSWLEPVQ 117

RESULT 6

Q07368

ID Q07368 PRELIMINARY; PRT; 212 AA.
 AC Q07368;
 DT 01-NOV-1996 (TrEMBLrel. 01, Created)
 DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
 DE Somatotropin 2 precursor (Growth hormone 2) (Fragment).
 OS Macaca mulatta (Rhesus macaque).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;


```

RL   Endocrinology 133:1744-1752(1993).
DR   EMBL; L16552; AAA18839.1; -.
DR   PIR; I53267; I53267.
DR   HSSP; P01241; 1AXI.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005179; F:hormone activity; IEA.
DR   InterPro; IPR001400; Somatotropin.
DR   Pfam; PF00103; hormone; 1.
DR   PRINTS; PR00836; SOMATOTROPIN.
DR   PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ   SEQUENCE      217 AA;  24942 MW;  FF5AA8915131F2BC CRC64;

```

[illegible]

Q866T8

Query Match 48.3%; Score 385; DB 6; Length 217;
Best Local Similarity 83.1%; Pred. No. 2.9e-33;
Matches 74; Conservative 8; Mismatches 7; Indels 0; Gaps 0;


```

      | : ||||| : || : || ||| ||||||||| : ||||| : ||| || : |||||
Db    29 TVPLSRFLD HAMLQA HRAHQ LAIDTYQEFEEAYIPKDQKYSFLHDSQTSFCFSDSIPTPS 88
      |
Qy    64 NREETQQKSNLELLRISLLLIQSWLEPVQ 92
      | ||||||||| : ||||| :
Db    89 NMEETQQKSNLELLRISLLLIESWLEPVR 117

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014407

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ID      Q14407          PRELIMINARY;          PRT;    217 AA.
AC      Q14407;
DT      01-NOV-1996 (TrEMBLrel. 01, Created)
DT      01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT      01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE      Chorionic somatomammotropin CS-2 (Chorionic somatomammotropin hormone
DE      2).
OS      Homo sapiens (Human).
OC      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC      Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX      NCBI_TaxID=9606;
RN      [1]
RP      SEQUENCE FROM N.A.
RX      MEDLINE=89307277; PubMed=2744760;
RA      Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
RA      Seeburg P.H.;
RT      "The human growth hormone locus: nucleotide sequence, biology, and
RT      evolution.";
RL      Genomics 4:479-497(1989).
RN      [2]
RP      SEQUENCE FROM N.A.
RX      MEDLINE=91102558; PubMed=1980158;
RA      Vnencak-Jones C.L., Phillips J.A. III.;
RT      "Hot spots for growth hormone gene deletions in homologous regions
RT      outside of Alu repeats.";
RL      Science 250:1745-1748(1990).
RN      [3]
RP      SEQUENCE FROM N.A.
RC      TISSUE=Placenta;
RA      Strausberg R.;
RL      Submitted (JUL-2002) to the EMBL/GenBank/DDBJ databases.
DR      EMBL; J03071; AAA52553.1; -.
DR      EMBL; BC022044; AAH22044.1; -.
DR      EMBL; BC035965; AAH35965.1; -.
DR      PIR; E32435; E32435.
DR      HSSP; P01241; 1A22.
DR      GO; GO:0005576; C:extracellular; IEA.
DR      GO; GO:0005179; F:hormone activity; IEA.
DR      InterPro; IPR001400; Somatotropin.
DR      Pfam; PF00103; hormone; 1.
DR      PRINTS; PR00836; SOMATOTROPIN.
DR      PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR      PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ      SEQUENCE    217 AA;  24994 MW;  39FAACDDB6B2E951 CRC64;

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Query Match 47.8%; Score 381; DB 4; Length 217;
Best Local Similarity 82.0%; Pred. No. 7.9e-33;

Matches 73; Conservative 8; Mismatches 8; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTPS 63
 |:|||||:||||:|||| |||| ||||| ||||:||||| : ||| ||:|||||

Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEEYIPKDQKYSFLHDSQTSFCFSDSIPTPS 88

Qy 64 NREETQQKSNLELLRISLLLIQSWLEPVQ 92
 | |||||:|||||:

Db 89 NMEETQQKSNLELLRISLLLIQSWLEPVR 117

RESULT 10

Q866U0

ID Q866U0 PRELIMINARY; PRT; 217 AA.
 AC Q866U0;
 DT 01-JUN-2003 (TrEMBLrel. 24, Created)
 DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
 DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
 DE Placental lactogen PL-B.
 OS Pan troglodytes (Chimpanzee).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
 OX NCBI_TaxID=9598;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Revol A., Esquivel D.E., Barrera H.S.;
 RT "The GH-PL locus a hot-point between human and chimpanzee genomes.";
 RL Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
 DR EMBL; AY146626; AAN84506.1; -.
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005179; F:hormone activity; IEA.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 SQ SEQUENCE 217 AA; 24884 MW; A1663257499827D4 CRC64;

Query Match 46.4%; Score 370; DB 6; Length 217;
 Best Local Similarity 80.9%; Pred. No. 1.2e-31;
 Matches 72; Conservative 7; Mismatches 10; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTPS 63
 |:||||| |||:|| |||| ||||| ||||:||||| : ||| ||:|||||

Db 29 TVPLSRLFKEAMLQAHPAHQLAIDTYQEFEEAYIPKDQKYSFLHDSQTSFCFSDSIPTPS 88

Qy 64 NREETQQKSNLELLRISLLLIQSWLEPVQ 92
 | |||||:|||||:

Db 89 NMEETQQKSNLELLRISLLLIQSWLEPVR 117

RESULT 11

Q8WND9

ID Q8WND9 PRELIMINARY; PRT; 217 AA.
 AC Q8WND9;
 DT 01-MAR-2002 (TrEMBLrel. 20, Created)
 DT 01-MAR-2002 (TrEMBLrel. 20, Last sequence update)

DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE Growth hormone.
GN GH-V.
OS Ateles geoffroyi (Black-handed spider monkey).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Atelinae; Ateles.
OX NCBI_TaxID=9509;
RN [1]
RP SEQUENCE FROM N.A.
RA Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RT "Independent duplication of the growth hormone gene in three
RT Anthropoidean lineages.";
RL Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AF374235; AAL72287.1; -.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro; IPR001400; Somatotropin.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 217 AA; 25293 MW; 741745A1B75C053E CRC64;

Query Match 43.7%; Score 348; DB 6; Length 217;
Best Local Similarity 75.8%; Pred. No. 2.8e-29;
Matches 69; Conservative 8; Mismatches 14; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEAYIPKEQKYSFLQNPQTSLSFSSES IPT 61
|| ||||| :|||:|:|:| || |||:| | |:| | |||||
Db 27 FPRIPLSRLFGDAMLRAHQLHQAFAFDITYQELEENCIPKKQKYFFLRNPKNFLCFSES IPT 86
Qy 62 PSNREETQQKSNLELLRLISLLLIQSWLEPVQ 92
| |:| | |:| | | ||||| |||||
Db 87 PFNKEEVLAKSSLELLHISLLLIQSWLEPVQ 117

RESULT 12

014643

ID 014643 PRELIMINARY; PRT; 202 AA.
AC 014643;
DT 01-JAN-1998 (TrEMBLrel. 05, Created)
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE Placental growth hormone 20kDa isoform precursor.
GN HGH-V.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Term placenta;
RX MEDLINE=98373737; PubMed=9709963;
RA Boguszewski C.L., Svensson P.A., Jansson T., Clark R.,
RA Carlsson L.M.S., Carlsson B.;
RT "Cloning of two novel growth hormone transcripts expressed in human
RT placenta.";

RL J. Clin. Endocrinol. Metab. 83:2878-2885(1998).
 DR EMBL; AF006060; AAB71828.1; -.
 DR HSSP; P01241; 1A22.
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005179; F:hormone activity; IEA.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KW Signal.
 FT SIGNAL 1 26 POTENTIAL.
 SQ SEQUENCE 202 AA; 23128 MW; 38B64D011A9197C6 CRC64;

Query Match 42.8%; Score 341; DB 4; Length 202;
 Best Local Similarity 65.8%; Pred. No. 1.5e-28;
 Matches 75; Conservative 4; Mismatches 9; Indels 26; Gaps 2;

Qy 2 FPTIPLSRFLDNAMLRARHLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 |||||:||||:||||| ||||| |||||
 Db 27 FPTIPLSRFLDNAMLRARRLYQLAYDTYQEF-----NPQTSLCFSESIPT 71
 Qy 62 PSNREETQQKSNLELLRISLLLIQSWLEPVQL-----GTGPRFVNQHL 104
 ||||:|||||:|||||:||||| | :||
 Db 72 PSNRVKTQQKSNLELLRISLLLIQSWLEPVQLLRSVFANSLVYGASDSNVYRHL 125

RESULT 13

Q8MI74

ID Q8MI74 PRELIMINARY; PRT; 217 AA.
 AC Q8MI74;
 DT 01-OCT-2002 (TrEMBLrel. 22, Created)
 DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
 DE Growth hormone-like protein 6 precursor.
 GN GHLP6.
 OS Callithrix jacchus (Common marmoset).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Callithrix.
 OX NCBI_TaxID=9483;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Wallis O.C., Wallis M.;
 RT "Characterisation of the GH gene cluster in a new-world monkey, the
 RT marmoset (Callithrix jacchus).";
 RL J. Mol. Endocrinol. 0:0-0(2002).
 DR EMBL; AJ489811; CAD34012.1; -.
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005179; F:hormone activity; IEA.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KW Signal.
 FT SIGNAL 1 26 POTENTIAL.
 FT CHAIN 27 217 GROWTH HORMONE-LIKE PROTEIN 6.
 SQ SEQUENCE 217 AA; 25177 MW; 5ECF148798278F1A CRC64;

Query Match 40.5%; Score 322.5; DB 6; Length 217;
 Best Local Similarity 64.7%; Pred. No. 1.6e-26;
 Matches 66; Conservative 13; Mismatches 22; Indels 1; Gaps 1;

Qy 3 PTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTP 62
 | | | | | : | | | : | | : | | : | | : | | | | : | | | | |
 Db 28 PRIPLSRLFGDAMLRARQLHHLALETYREFEKNVCVPKEQKYFFLRNPETFVCFSESIPTP 87
 Qy 63 SNREETQQKSNELELLRISLLLIQSWLEPVQLGTGPRFVNQHL 104
 : | | | | : | | : | | | | | | | | | | : | | | | |
 Db 88 FHKEEMLGKSNVELLHISLLLIQSWLEPMQ-RLGSIFANSQL 128

RESULT 14

O70615

ID O70615 PRELIMINARY; PRT; 216 AA.
 AC O70615;
 DT 01-AUG-1998 (TrEMBLrel. 07, Created)
 DT 01-AUG-1998 (TrEMBLrel. 07, Last sequence update)
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
 DE Growth hormone precursor.
 OS Spalax leucodon ehrenbergi (Ehrenberg's mole rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Spalacinae;
 OC Nannospalax.
 OX NCBI_TaxID=30637;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=99124645; PubMed=9924177;
 RA Lioupis A., Nevo E., Wallis M.;
 RT "Cloning and characterisation of the gene encoding mole rat (Spalax
 RT ehrenbergi) growth hormone."
 RL J. Mol. Endocrinol. 22:29-36(1999).
 DR EMBL; AJ005819; CAA06716.1; -.
 DR HSSP; P01241; 1AXI.
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005179; F:hormone activity; IEA.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KW Signal.
 FT SIGNAL 1 26 POTENTIAL.
 FT CHAIN 27 216 GROWTH HORMONE.
 SQ SEQUENCE 216 AA; 24627 MW; EEAB8A523BA0ADFE CRC64;

Query Match 38.5%; Score 306.5; DB 11; Length 216;
 Best Local Similarity 65.9%; Pred. No. 8.2e-25;
 Matches 60; Conservative 13; Mismatches 17; Indels 1; Gaps 1;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 | | : | | | | | | | | | | | | | | | : | | : | | | : | | | |
 Db 27 FPAMPLSNLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYIS-IQNAQAACFCSETIPA 85
 Qy 62 PSNREETQQKSNELELLRISLLLIQSWLEPVQ 92

Db 86 PTKKEEAQQRSDMELLRFSLLLIQSWLGPVQ 116

RESULT 15

Q8MI73

ID Q8MI73 PRELIMINARY; PRT; 216 AA.
AC Q8MI73;
DT 01-OCT-2002 (TrEMBLrel. 22, Created)
DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE Growth hormone precursor.
GN GH.
OS Delphinus delphis (Saddleback dolphin) (Black sea dolphin).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti; Delphinidae;
OC Delphinus.
OX NCBI_TaxID=9728;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
RA Maniou Z., Wallis O.C., Wallis M.;
RT "Cloning and characterisation of the GH gene from the common dolphin
RT (Delphinus delphis).";
RL Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AJ492191; CAD37292.1; -.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro; IPR001400; Somatotropin.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Signal.
FT SIGNAL 1 26 POTENTIAL.
FT CHAIN 27 216 GROWTH HORMONE.
SQ SEQUENCE 216 AA; 24509 MW; 1EC467A84CCFEB02 CRC64;

Query Match 37.8%; Score 301.5; DB 6; Length 216;
Best Local Similarity 64.8%; Pred. No. 2.8e-24;
Matches 59; Conservative 14; Mismatches 17; Indels 1; Gaps 1;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
|| :||| || ||:||| |||| |||:|| ||||: |:|| :|| | : |||:||
Db 27 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYIS-IQNTQAAFCFSETIPA 85

Qy 62 PSNREETQQKSNLELLLRISLLLIQSWLEPVQ 92
|: :| ||:|:|||| ||||| |||
Db 86 PTKKDEAQQRSDVELLRFSLLLIQSWLGPVQ 116

Search completed: July 15, 2004, 16:41:01
Job time : 52.3794 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: July 15, 2004, 16:28:49 ; Search time 10.3545 Seconds
(without alignments)
754.314 Million cell updates/sec

Title: US-09-423-100-7
Perfect score: 797
Sequence: 1 MFPTIPLSRFLDNAMLAHR.....IVEQCCTSICSLYQLENYCN 150

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_42:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	% Query		DB	ID	Description
	Score	Match Length			
1	461	57.8	217	1	SOMA_HUMAN
2	461	57.8	217	1	SOMA_PANTR
3	460	57.7	217	1	SOMA_MACMU
4	437	54.8	217	1	SOMA_SAIIBB
5	434.5	54.5	217	1	SOM2_PANTR
6	432	54.2	217	1	SOMA_CALJA
7	426.5	53.5	217	1	SOM2_HUMAN
8	399	50.1	217	1	SOM2_MACMU
9	381	47.8	217	1	PLL_HUMAN
10	310.5	39.0	216	1	SOMA_MESAU
11	307.5	38.6	190	1	SOMA_BALBO
12	306.5	38.5	216	1	SOMA_HORSE
13	306.5	38.5	217	1	SOMA_GALSE
14	306.5	38.5	217	1	SOMA_NYCPY
15	304.5	38.2	216	1	SOMA_MOUSE
16	302.5	38.0	216	1	SOMA_RABIT
17	302.5	38.0	216	1	SOMA_RAT
					P01241 homo sapien
					P58756 pan troglod
					P33093 macaca mula
					P58343 saimiri bol
					P58757 pan troglod
					Q9gmb3 callithrix
					P01242 homo sapien
					Q07370 macaca mula
					P01243 homo sapien
					P37886 mesocricetu
					P33092 balaenopter
					P01245 equus cabal
					Q9gka1 galago sene
					Q9gmb2 nycticebus
					P06880 mus musculu
					P46407 oryctolagus
					P01244 rattus norv

18	301.5	37.8	190	1	SOMA_LOXAF	P20392	loxodonta a
19	301.5	37.8	216	1	SOMA_CANFA	P33711	canis famil
20	301.5	37.8	216	1	SOMA_FELCA	P46404	felis silve
21	301.5	37.8	216	1	SOMA_PIG	P01248	sus scrofa
22	299.5	37.6	216	1	SOMA_MUSVI	P19795	mustela vis
23	297.5	37.3	190	1	SOMA_LAMPA	P37885	lama guanic
24	295.5	37.1	190	1	SOMA_VULVU	P10766	vulpes vulp
25	291.5	36.6	215	1	SOMA_MONDO	Q9gl60	monodelphis
26	291.5	36.6	215	1	SOMA_TRIVU	O62754	trichosurus
27	289.5	36.3	217	1	SOMA_BOVIN	P01246	bos taurus
28	289.5	36.3	217	1	SOMA_CEREL	P56437	cervus elap
29	289.5	36.3	217	1	SOMA_SHEEP	P01247	ovis aries
30	282.5	35.4	217	1	SOMA_BUBBU	O18938	bubalus bub
31	278.5	34.9	216	1	SOMA_MELGA	P22077	meleagris g
32	277.5	34.8	110	1	INS_CERAE	P30407	cercopithec
33	277.5	34.8	110	1	INS_RABIT	P01311	oryctolagus
34	275.5	34.6	216	1	SOMA_CHICK	P08998	gallus gall
35	274.5	34.4	217	1	SOMA_STRCA	Q9pwg3	struthio ca
36	273.5	34.3	51	1	INS_BALPH	P01312	balaenopter
37	273.5	34.3	51	1	INS_ELEMA	P01316	elephas max
38	273.5	34.3	110	1	INS_MACFA	P30406	macaca fasc
39	272.5	34.2	190	1	SOMA_CRONO	P55755	crocodylus
40	272	34.1	110	1	INS_PANTR	P30410	pan troglod
41	270	33.9	110	1	INS_HUMAN	P01308	homo sapien
42	268.5	33.7	51	1	INS_ACOCA	P01324	acomys cahi
43	268.5	33.7	191	1	SOMA_CHEMY	P34005	chelonias my
44	266.5	33.4	105	1	INS_BOVIN	P01317	bos taurus
45	266.5	33.4	110	1	INS_SPETR	Q91xi3	spermophilu

ALIGNMENTS

RESULT 1

SOMA_HUMAN

ID SOMA_HUMAN STANDARD; PRT; 217 AA.
AC P01241; Q14405; Q16631; Q9HBZ1; Q9UMJ7; Q9UNL5;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-MAR-1992 (Rel. 21, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth
DE hormone) (Growth hormone 1).
GN GH1.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RX MEDLINE=80034477; PubMed=386281;
RA Roskam W., Rougeon F.;
RT "Molecular cloning and nucleotide sequence of the human growth
RT hormone structural gene."
RL Nucleic Acids Res. 7:305-320(1979).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RX MEDLINE=79203293; PubMed=377496;

RA Martial J.A., Hallewell R.A., Baxter J.D., Goodman H.M.;
 RT "Human growth hormone: complementary DNA cloning and expression in
 RT bacteria.";
 RL Science 205:602-607(1979).
 RN [3]
 RP SEQUENCE FROM N.A. (ISOFORM 1), AND POSSIBLE ALTERNATIVE SPLICING.
 RX MEDLINE=82014939; PubMed=6269091;
 RA Denoto F.M., Moore D.D., Goodman H.M.;
 RT "Human growth hormone DNA sequence and mRNA structure: possible
 RT alternative splicing.";
 RL Nucleic Acids Res. 9:3719-3730(1981).
 RN [4]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=83182010; PubMed=7169009;
 RA Seeburg P.H.;
 RT "The human growth hormone gene family: nucleotide sequences show
 RT recent divergence and predict a new polypeptide hormone.";
 RL DNA 1:239-249(1982).
 RN [5]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=89307277; PubMed=2744760;
 RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,
 RA Gelinas R.E., Seeburg P.H.;
 RT "The human growth hormone locus: nucleotide sequence, biology, and
 RT evolution.";
 RL Genomics 4:479-497(1989).
 RN [6]
 RP SEQUENCE FROM N.A. (ISOFORM 3).
 RC TISSUE=Pituitary;
 RA Gu J., Huang Q.-H., Li N., Xu S.-H., Han Z.-G., Fu G., Chen Z.;
 RT "A novel gene expressed in human pituitary.";
 RL Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
 RN [7]
 RP SEQUENCE FROM N.A. (ISOFORM 4).
 RC TISSUE=Pituitary;
 RX MEDLINE=20402571; PubMed=10931946;
 RA Hu R.-M., Han Z.-G., Song H.-D., Peng Y.-D., Huang Q.-H., Ren S.-X.,
 RA Gu Y.-J., Huang C.-H., Li Y.-B., Jiang C.-L., Fu G., Zhang Q.-H.,
 RA Gu B.-W., Dai M., Mao Y.-F., Gao G.-F., Rong R., Ye M., Zhou J.,
 RA Xu S.-H., Gu J., Shi J.-X., Jin W.-R., Zhang C.-K., Wu T.-M.,
 RA Huang G.-Y., Chen Z., Chen M.-D., Chen J.-L.;
 RT "Gene expression profiling in the human hypothalamus-pituitary-adrenal
 RT axis and full-length cDNA cloning.";
 RL Proc. Natl. Acad. Sci. U.S.A. 97:9543-9548(2000).
 RN [8]
 RP SEQUENCE OF 1-26 FROM N.A.
 RX MEDLINE=86137393; PubMed=3912261;
 RA Gray G.L., Baldridge J.S., McKeown K.S., Heyneker H.L., Chang C.N.;
 RT "Periplasmic production of correctly processed human growth hormone in
 RT Escherichia coli: natural and bacterial signal sequences are
 RT interchangeable.";
 RL Gene 39:247-254(1985).
 RN [9]
 RP SEQUENCE OF 27-217.
 RX MEDLINE=69289202; PubMed=5810834;
 RA Li C.H., Dixon J.S., Liu W.-K.;
 RT "Human pituitary growth hormone. XIX. The primary structure of the

RT hormone.";
 RL Arch. Biochem. Biophys. 133:70-91(1969).
 RN [10]
 RP SEQUENCE OF 27-217, AND REVISIONS.
 RX MEDLINE=72143935; PubMed=5144027;
 RA Li C.H., Dixon J.S.;
 RT "Human pituitary growth hormone. 32. The primary structure of the
 RT hormone: revision.";
 RL Arch. Biochem. Biophys. 146:233-236(1971).
 RN [11]
 RP REVISION.
 RX MEDLINE=73092028; PubMed=4675454;
 RA Bewley T.A., Dixon J.S., Li C.H.;
 RT "Sequence comparison of human pituitary growth hormone, human
 RT chorionic somatomammotropin, and ovine pituitary growth and
 RT lactogenic hormones.";
 RL Int. J. Pept. Protein Res. 4:281-287(1972).
 RN [12]
 RP SEQUENCE OF 27-61 AND 102-124.
 RX MEDLINE=71139765; PubMed=5279046;
 RA Niall H.D.;
 RT "Revised primary structure for human growth hormone.";
 RL Nature New Biol. 230:90-91(1971).
 RN [13]
 RP REVISIONS TO 119-120 AND 157-159.
 RX MEDLINE=71153968; PubMed=5279528;
 RA Niall H.D., Hogan M.L., Sauer R., Rosenblum I.Y., Greenwood F.C.;
 RT "Sequences of pituitary and placental lactogenic and growth hormones:
 RT evolution from a primordial peptide by gene reduplication.";
 RL Proc. Natl. Acad. Sci. U.S.A. 68:866-869(1971).
 RN [14]
 RP REVISION.
 RA Niall H.D.;
 RT "The chemistry of the human lactogenic hormones.";
 RL (In) Griffiths K. (eds.);
 RL Prolactin and carcinogenesis, Proc. fourth tenovus workshop prolactin,
 RL pp.13-20, Alpha Omega Alpha Press, Cardiff (1972).
 RN [15]
 RP SEQUENCE OF 27-79 (ISOFORM 2).
 RX MEDLINE=81117361; PubMed=7462247;
 RA Chapman G.E., Rogers K.M., Brittain T., Bradshaw R.A., Bates O.J.,
 RA Turner C., Cary P.D., Crane-Robinson C.;
 RT "The 20,000 molecular weight variant of human growth hormone.
 RT Preparation and some physical and chemical properties.";
 RL J. Biol. Chem. 256:2395-2401(1981).
 RN [16]
 RP SEQUENCE OF 46-80 (ISOFORM 2).
 RX MEDLINE=80130196; PubMed=7356479;
 RA Lewis U.J., Bonewald L.F., Lewis L.J.;
 RT "The 20,000-dalton variant of human growth hormone: location of the
 RT amino acid deletions.";
 RL Biochem. Biophys. Res. Commun. 92:511-516(1980).
 RN [17]
 RP DEAMIDATION OF GLN-163 AND ASN-178.
 RX MEDLINE=82052997; PubMed=7028740;
 RA Lewis U.J., Singh R.N., Bonewald L.F., Seavey B.K.;
 RT "Altered proteolytic cleavage of human growth hormone as a result of

RT deamidation.";
 RL J. Biol. Chem. 256:11645-11650(1981).
 RN [18]
 RP REVIEW.
 RX MEDLINE=99321812; PubMed=10393484;
 RA Baumann G.;
 RT "Growth hormone heterogeneity in human pituitary and plasma.";
 RL Horm. Res. 51 Suppl. 1:2-6(1999).
 RN [19]
 RP 3D-STRUCTURE MODELING.
 RX MEDLINE=88190073; PubMed=3447173;
 RA Cohen F.E., Kuntz I.D.;
 RT "Prediction of the three-dimensional structure of human growth
 RT hormone.";
 RL Proteins 2:162-166(1987).
 RN [20]
 RP X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
 RX MEDLINE=92196577; PubMed=1549776;
 RA de Vos A.M., Ultsch M., Kossiakoff A.A.;
 RT "Human growth hormone and extracellular domain of its receptor:
 RT crystal structure of the complex.";
 RL Science 255:306-312(1992).
 RN [21]
 RP X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).
 RX MEDLINE=95075462; PubMed=7984244;
 RA Somers W., Ultsch M., de Vos A.M., Kossiakoff A.A.;
 RT "The X-ray structure of a growth hormone-prolactin receptor complex.";
 RL Nature 372:478-481(1994).
 RN [22]
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
 RA Chantalat L., Chirgadze N.Y., Jones N., Korber F., Navaza J.,
 RA Pavlovsk A.G., Wlodawer A.;
 RT "The crystal-structure of wild-type growth-hormone at 2.5-A
 RT resolution.";
 RL Protein Pept. Lett. 2:333-340(1995).
 RN [23]
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
 RX MEDLINE=97113023; PubMed=8943276;
 RA Sundstroem M., Lundqvist T., Roedin J., Giebel L.B., Milligan D.,
 RA Norstedt G.;
 RT "Crystal structure of an antagonist mutant of human growth hormone,
 RT G120R, in complex with its receptor at 2.9-A resolution.";
 RL J. Biol. Chem. 271:32197-32203(1996).
 RN [24]
 RP VARIANT KOWARSKI SYNDROME CYS-103.
 RX MEDLINE=96150232; PubMed=8552145;
 RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;
 RT "Short stature caused by a mutant growth hormone.";
 RL New Engl. J. Med. 334:432-436(1996).
 RN [25]
 RP ERRATUM.
 RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;
 RL New Engl. J. Med. 334:1207-1207(1996).
 RN [26]
 RP VARIANT KOWARSKI SYNDROME GLY-138.
 RX MEDLINE=97426478; PubMed=9276733;
 RA Takahashi Y., Shirono H., Arisaka O., Takahashi K., Yagi T., Koga J.,

RA Kaji H., Okimura Y., Abe H., Tanaka T., Chihara K.;
 RT "Biologically inactive growth hormone caused by an amino acid
 RT substitution.";
 RL J. Clin. Invest. 100:1159-1165(1997).
 RN [27]
 RP VARIANT CYS-105.
 RX MEDLINE=99318093; PubMed=10391209;

Query Match 57.8%; Score 461; DB 1; Length 217;
 Best Local Similarity 70.3%; Pred. No. 2.3e-38;
 Matches 102; Conservative 7; Mismatches 20; Indels 16; Gaps 4;

QY 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 |||
 Db 27 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 86
 QY 62 PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGS-----HLVE 111
 ||| : | :
 Db 87 PSNREETQQKSNLELLRISLLLIQSWLEPVQF-LRSVFANSLVYGASDSNVYDLLKDLLE 145
 QY 112 ALYLVCG--ERGFYTPKTRGIVEQ 134
 : : | | : | : |
 Db 146 GIQTLMGRLDG---SPRTGQIFKQ 167

RESULT 2

SOMA_PANTR

ID SOMA_PANTR STANDARD; PRT; 217 AA.
 AC P58756;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth
 DE hormone) (Growth hormone 1).
 GN GH1.
 OS Pan troglodytes (Chimpanzee).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
 OX NCBI_TaxID=9598;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
 RT "Independent duplication of the growth hormone gene in three
 RT Anthropean lineages.";
 RL Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
 CC -!- FUNCTION: Plays an important role in growth control. Its major
 CC role in stimulating body growth is to stimulate the liver and
 CC other tissues to secrete IGF-1. It stimulates both the
 CC differentiation and proliferation of myoblasts. It also stimulates
 CC amino acid uptake and protein synthesis in muscle and other
 CC tissues (By similarity).
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
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RL Endocrinology 133:1744-1752(1993).
 RN [2]
 RP SEQUENCE OF 27-217.
 RX MEDLINE=86129460; PubMed=3080959;
 RA Li C.H., Chung D., Lahm H.W., Stein S.;
 RT "The primary structure of monkey pituitary growth hormone.";
 RL Arch. Biochem. Biophys. 245:287-291(1986).
 CC -!- FUNCTION: Plays an important role in growth control. Its major
 CC role in stimulating body growth is to stimulate the liver and
 CC other tissues to secrete IGF-1. It stimulates both the
 CC differentiation and proliferation of myoblasts. It also stimulates
 CC amino acid uptake and protein synthesis in muscle and other
 CC tissues.
 CC -!- SUBCELLULAR LOCATION: Secreted.
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 CC or send an email to license@isb-sib.ch).
 CC -----
 DR EMBL; L16556; AAA18842.1; -.
 DR PIR; I67410; I67410.
 DR HSSP; P01241; IAXI.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Pituitary; Signal.
 FT SIGNAL 1 26
 FT CHAIN 27 217 SOMATOTROPIN.
 FT DISULFID 79 191 BY SIMILARITY.
 FT DISULFID 208 215 BY SIMILARITY.
 FT CONFLICT 100 100 E -> Q (IN REF. 2).
 FT CONFLICT 179 179 N -> D (IN REF. 2).
 SQ SEQUENCE 217 AA; 24913 MW; 2C5180341EEC46D0 CRC64;

Query Match 57.7%; Score 460; DB 1; Length 217;
 Best Local Similarity 98.9%; Pred. No. 2.9e-38;
 Matches 90; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 ||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 27 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 86
 Qy 62 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 92
 ||||||||||||||||||||||||||||
 Db 87 PSNREETQQKSNLELLRISLLLIQSWLEPVQ 117

RESULT 4
 SOMA_SAIBB
 ID SOMA_SAIBB STANDARD; PRT; 217 AA.

AC P58343;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Somatotropin precursor (Growth hormone).
 GN GH1.
 OS Saimiri boliviensis boliviensis (Bolivian squirrel monkey).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri.
 OX NCBI_TaxID=39432;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=21265430; PubMed=11371582;
 RA Liu J.C., Makova K.D., Adkins R.M., Gibson S., Li W.H.;
 RT "Episodic evolution of growth hormone in primates and emergence of the
 RT species specificity of human growth hormone receptor."
 RL Mol. Biol. Evol. 18:945-953(2001).
 CC -!- FUNCTION: Plays an important role in growth control. Its major
 CC role in stimulating body growth is to stimulate the liver and
 CC other tissues to secrete IGF-1. It stimulates both the
 CC differentiation and proliferation of myoblasts. It also stimulates
 CC amino acid uptake and protein synthesis in muscle and other
 CC tissues (By similarity).
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
 CC -----
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 CC or send an email to license@isb-sib.ch).
 CC -----
 DR EMBL; AF339060; AAK62287.1; -.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Pituitary; Signal.
 FT SIGNAL 1 26 BY SIMILARITY.
 FT CHAIN 27 217 SOMATOTROPIN.
 FT DISULFID 79 191 BY SIMILARITY.
 FT DISULFID 208 215 BY SIMILARITY.
 SQ SEQUENCE 217 AA; 24864 MW; 9515289992C529F7 CRC64;

Query Match 54.8%; Score 437; DB 1; Length 217;
 Best Local Similarity 91.3%; Pred. No. 5.4e-36;
 Matches 84; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLEFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 ||||| |||||
 Db 27 FPTIPLSRLLDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 86
 QY 62 PSNREETQQKSNLELLRISLLLIQSWLEPVQL 93
 |:::|||||||:|||||

RESULT 5

SOM2_PANTR

ID SOM2_PANTR STANDARD; PRT; 217 AA.
AC P58757;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Growth hormone variant precursor (GH-V) (Placenta-specific growth hormone) (Growth hormone 2).
GN GH2.
OS Pan troglodytes (Chimpanzee).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
OX NCBI_TaxID=9598;
RN [1]
RP SEQUENCE FROM N.A.
RA Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RT "Independent duplication of the growth hormone gene in three
RT Anthropeoid lineages.";
RL Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
CC -!- FUNCTION: Plays an important role in growth control. Its major
CC role in stimulating body growth is to stimulate the liver and
CC other tissues to secrete IGF-1. It stimulates both the
CC differentiation and proliferation of myoblasts. It also stimulates
CC amino acid uptake and protein synthesis in muscle and other
CC tissues.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- TISSUE SPECIFICITY: Expressed in the placenta.
CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; AF374233; AAL72285.1; -.
DR InterPro; IPR001400; Somatotropin.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Placenta; Signal; Glycoprotein.
FT SIGNAL 1 26 BY SIMILARITY.
FT CHAIN 27 217 GROWTH HORMONE VARIANT.
FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
SQ SEQUENCE 217 AA; 24990 MW; 1592A429075677DE CRC64;

Query Match 54.5%; Score 434.5; DB 1; Length 217;
Best Local Similarity 78.9%; Pred. No. 9.6e-36;
Matches 90; Conservative 4; Mismatches 9; Indels 11; Gaps 1;


```

Qy      2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db      27 FPTIPLSRLFDNAMLRAHRLYQLAYDITYQEFEEAYILKEQKYSFLQNPQTSLSFSESIPT 86

Qy      62 PSNREETQQKSNLELLRISLLLIQSWLEPVQL-----GTGPRFVNQHL 104
        ||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db      87 PSNRVKTQQKSNLELLRISLLLIQSWLEPVQLLRVVFANSLVYGASDSNVYRHL 140

```

RESULT 6

SOMA_CALJA

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ID      SOMA_CALJA      STANDARD;      PRT;      217 AA.
AC      Q9GMB3;
DT      28-FEB-2003 (Rel. 41, Created)
DT      28-FEB-2003 (Rel. 41, Last sequence update)
DT      28-FEB-2003 (Rel. 41, Last annotation update)
DE      Somatotropin precursor (Growth hormone).
GN      GH1.
OS      Callithrix jacchus (Common marmoset).
OC      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC      Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae;
OC      Callithrix.
OX      NCBI_TaxID=9483;
RN      [1]
RP      SEQUENCE FROM N.A.
RA      Wallis O.C., Wallis M.;
RT      "Cloning and characterisation of a putative growth hormone encoding
RT      gene from the marmoset (Callithrix jacchus).";
RL      Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.
CC      -!- FUNCTION: Plays an important role in growth control. Its major
CC      role in stimulating body growth is to stimulate the liver and
CC      other tissues to secrete IGF-1. It stimulates both the
CC      differentiation and proliferation of myoblasts. It also stimulates
CC      amino acid uptake and protein synthesis in muscle and other
CC      tissues (By similarity).
CC      -!- SUBCELLULAR LOCATION: Secreted.
CC      -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC      -----
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CC      or send an email to license@isb-sib.ch).
CC      -----
DR      EMBL; AJ297563; CAC03481.1; -.
DR      HSSP; P01241; 1A22.
DR      InterPro; IPR001400; Somatotropin.
DR      Pfam; PF00103; hormone; 1.
DR      PRINTS; PR00836; SOMATOTROPIN.
DR      PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR      PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW      Hormone; Pituitary; Signal.
FT      SIGNAL      1      26      BY SIMILARITY.
FT      CHAIN      27      217      SOMATOTROPIN.

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FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
SQ SEQUENCE 217 AA; 24959 MW; E102151A12CE6192 CRC64;

```
Qy      2 FPTIPLSRFLDNAMLRAHRLHQ LAFD TYQEFE EAYIPKE QKYSF LQN PQTSL SFSESI PT 61  
       ||| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Db     27 FPTIPLSRLLDNAMLRAHRLHQ LAFD TYQEFE EAYIPKE QKYSF LQN PQTSL CFSESI PT 86  
  
Qy     62 PSNREETQQ KSNLE LLRISL LLIQS WLEPVQ 92  
       |: :: :||| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Db    87 PASKKETOOK S NLE LLRMSL LLIQS WFEPVO 117
```

SOM2 HUMAN

RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution.";
RL Genomics 4:479-497(1989).

RN [5]

RP SEQUENCE FROM N.A.

RC TISSUE=Placenta;

RX MEDLINE=22388257; PubMed=12477932;

RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahey J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;

RT "Generation and initial analysis of more than 15,000 full-length
RT human and mouse cDNA sequences.";

RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).

RN [6]

RP REVIEW.

RX MEDLINE=99321812; PubMed=10393484;

RA Baumann G.;

RT "Growth hormone heterogeneity in human pituitary and plasma.";

RL Horm. Res. 51 Suppl. 1:2-6(1999).

CC -!- FUNCTION: Plays an important role in growth control. Its major
CC role in stimulating body growth is to stimulate the liver and
CC other tissues to secrete IGF-1. It stimulates both the
CC differentiation and proliferation of myoblasts. It also stimulates
CC amino acid uptake and protein synthesis in muscle and other
CC tissues.

CC -!- SUBUNIT: Monomer, dimer, trimer, tetramer and pentamer, disulfide-
CC linked or non-covalently associated, in homopolymeric and
CC heteropolymeric combinations. Can also form a complex either with
CC GHBP or with the alpha2-macroglobulin complex.

CC -!- SUBCELLULAR LOCATION: Secreted.

CC -!- ALTERNATIVE PRODUCTS:

CC Event=Alternative splicing; Named isoforms=2;

CC Name=1; Synonyms=GH-V1;

CC IsoId=P01242-1; Sequence=Displayed;

CC Name=2; Synonyms=GH-V2;

CC IsoId=P01242-2; Sequence=VSP_006203;

CC Note=No experimental confirmation available;

CC -!- TISSUE SPECIFICITY: Expressed in the placenta.

CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.

CC -----
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DT 01-NOV-1997 (Rel. 35, Created)
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Growth hormone variant precursor (GH-V) (Placenta-specific growth
 DE hormone) (Growth hormone 2).
 GN GH2.
 OS Macaca mulatta (Rhesus macaque).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
 OC Cercopithecinae; Macaca.
 OX NCBI_TaxID=9544;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Golos T.G.;
 RL Submitted (JAN-1994) to the EMBL/GenBank/DDBJ databases.
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Placenta;
 RX MEDLINE=94008724; PubMed=8404617;
 RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
 RT "Cloning of four growth hormone/chorionic somatomammotropin-related
 RT complementary deoxyribonucleic acids differentially expressed during
 RT pregnancy in the rhesus monkey placenta.";
 RL Endocrinology 133:1744-1752(1993).
 CC -!- FUNCTION: Plays an important role in growth control. Its major
 CC role in stimulating body growth is to stimulate the liver and
 CC other tissues to secrete IGF-1. It stimulates both the
 CC differentiation and proliferation of myoblasts. It also stimulates
 CC amino acid uptake and protein synthesis in muscle and other
 CC tissues.
 CC -!- SUBCELLULAR LOCATION: Secreted (By similarity).
 CC -!- TISSUE SPECIFICITY: Expressed in the placenta.
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
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 CC -----
 DR EMBL; U02293; AAA03391.1; -.
 DR EMBL; L16555; AAA20180.1; -.
 DR PIR; I67411; I67411.
 DR HSSP; P01241; 1HGU.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Placenta; Signal; Glycoprotein.
 FT SIGNAL 1 26 BY SIMILARITY.
 FT CHAIN 27 217 GROWTH HORMONE VARIANT.
 FT DISULFID 79 191 BY SIMILARITY.
 FT DISULFID 208 215 BY SIMILARITY.
 FT CONFLICT 57 57 L -> F (IN REF. 2).

Query Match 50.1%; Score 399; DB 1; Length 217;
Best Local Similarity 66.9%; Pred. No. 3.1e-32;
Matches 85; Conservative 9; Mismatches 19; Indels 14; Gaps 2;

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Qy      2  FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT  61
        |||||  ||: |: ||| ||:||||| : |||||:||||| |||||
Db      27  FPTIPLSWLFNTAVFRAHHLHKLAFDITYPKLEEAYIPKEQKYSFLRNPQTSLCFSESIPT  86

Qy      62  PSNREETQQKSNLELLRISLLLIQSWLEPVQLGTGPRFVNQHLCGSHLVEA-----LY 114
        |||:|||||  |||||  : : :|||  ||
Db      87  PSNKEETQQKSNLELLHISLLLIQSWLEPVQF-----LRSVFANHLVHTNSNFDIYLY 139

Qy      115  LVCGERG 121
        |  | |
Db      140  LKKLEEG 146

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PLL HUMAN

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ID      PLL_HUMAN          STANDARD;          PRT;    217 AA.
AC      P01243;
DT      21-JUL-1986 (Rel. 01, Created)
DT      01-APR-1988 (Rel. 07, Last sequence update)
DT      15-MAR-2004 (Rel. 43, Last annotation update)
DE      Lactogen precursor (Choriomammotropin) (Chorionic somatomammotropin).
GN      CSH1 AND CSH2.
OS      Homo sapiens (Human).
OC      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC      Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX      NCBI_TaxID=9606;
RN      [1]
RP      SEQUENCE FROM N.A. (GENE CSH1).
RX      MEDLINE=85030426; PubMed=6208192;
RA      Selby M.J., Barta A., Baxter J.D., Bell G.I., Eberhardt N.L.;
RT      "Analysis of a major human chorionic somatomammotropin gene. Evidence
RT      for two functional promoter elements.";
RL      J. Biol. Chem. 259:13131-13138(1984).
RN      [2]
RP      SEQUENCE FROM N.A. (GENE CSH2).
RX      MEDLINE=87161235; PubMed=3030680;
RA      Hirt H., Kimelman J., Birnbaum M.J., Chen E.Y., Seeburg P.H.,
RA      Eberhardt N.L., Barta A.;
RT      "The human growth hormone gene locus: structure, evolution, and
RT      allelic variations.";
RL      DNA 6:59-70(1987).
RN      [3]
RP      SEQUENCE FROM N.A.
RX      MEDLINE=83160916; PubMed=6300056;
RA      Barrera-Saldana H.A., Seeburg P.H., Saunders G.F.;
RT      "Two structurally different genes produce the same secreted human
RT      placental lactogen hormone.";
RL      J. Biol. Chem. 258:3787-3793(1983).
RN      [4]
RP      SEQUENCE FROM N.A. (GENES CSH1 AND CSH2).

```

RX MEDLINE=89307277; PubMed=2744760;
 RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
 RA Seeburg P.H.;
 RT "The human growth hormone locus: nucleotide sequence, biology, and
 RT evolution.";
 RL Genomics 4:479-497(1989).
 RN [5]
 RP SEQUENCE.
 RX MEDLINE=83182010; PubMed=7169009;
 RA Seeburg P.H.;
 RT "The human growth hormone gene family: nucleotide sequences show
 RT recent divergence and predict a new polypeptide hormone.";
 RL DNA 1:239-249(1982).
 RN [6]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Placenta, and Uterus;
 RX MEDLINE=22388257; PubMed=12477932;
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
 RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
 RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
 RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
 RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
 RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
 RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
 RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
 RA Fahey J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,
 RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
 RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
 RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
 RT "Generation and initial analysis of more than 15,000 full-length
 RT human and mouse cDNA sequences.";
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
 RN [7]
 RP SEQUENCE OF 50-217 FROM N.A.
 RX MEDLINE=78071761; PubMed=593368;
 RA Shine J., Seeburg P.H., Martial J.A., Baxter J.D., Goodman H.M.;
 RT "Construction and analysis of recombinant DNA for human chorionic
 RT somatomammotropin.";
 RL Nature 270:494-499(1977).
 RN [8]
 RP SEQUENCE OF 27-217.
 RX MEDLINE=73201971; PubMed=4712450;
 RA Li C.H., Dixon J.S., Chung D.;
 RT "Amino acid sequence of human chorionic somatomammotropin.";
 RL Arch. Biochem. Biophys. 155:95-110(1973).
 RN [9]
 RP SEQUENCE OF 27-117.
 RX MEDLINE=72016313; PubMed=5286363;
 RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;
 RT "Amino-acid sequence of human placental lactogen.";
 RL Nature New Biol. 233:59-61(1971).
 RN [10]

RP ERRATUM.
RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;
RL Nature New Biol. 235:64-64(1972).
RN [11]
RP INTERCHAIN DISULFIDE BONDS.
RX MEDLINE=79173081; PubMed=438159;
RA Schneider A.B., Kowalski K., Russell J., Sherwood L.M.;
RT "Identification of the interchain disulfide bonds of dimeric human
RT placental lactogen.";
RL J. Biol. Chem. 254:3782-3787(1979).
CC -!- FUNCTION: Similar to that of somatotropin.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- MISCELLANEOUS: The sequence of CSH1 is shown.
CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC -----
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CC -----
DR EMBL; V00573; CAA23836.1; -.
DR EMBL; J00289; AAA98747.1; -.
DR EMBL; K02401; AAA52115.1; -.
DR EMBL; M15894; AAA52116.1; -.
DR EMBL; J03071; AAA52551.1; -.
DR EMBL; J00118; AAA98621.1; -.
DR EMBL; BC002717; AAH02717.1; -.
DR EMBL; BC005921; AAH05921.1; -.
DR EMBL; BC020756; AAH20756.1; -.
DR PIR; A26449; A26449.
DR PIR; C32435; LCHUC.
DR HSSP; P01241; 1A22.
DR Genew; HGNC:2440; CSH1.
DR Genew; HGNC:2441; CSH2.
DR MIM; 150200; -.
DR GO; GO:0007565; P:pregnancy; TAS.
DR InterPro; IPR001400; Somatotropin.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Placenta; Multigene family; Signal.
FT SIGNAL 1 26
FT CHAIN 27 217 LACTOGEN.
FT DISULFID 79 191
FT DISULFID 208 215
FT DISULFID 208 208 INTERCHAIN (WITH C-215 IN A DIMER).
FT DISULFID 215 215 INTERCHAIN (WITH C-208 IN A DIMER).
FT VARIANT 3 3 P -> A (IN CSH2).
FT /FTid=VAR_007166.
FT VARIANT 104 105 IS -> L (IN CSH2).
FT /FTid=VAR_007167.
FT CONFLICT 84 84 I -> T (IN REF. 9).
FT CONFLICT 95 95 MISSING (IN REF. 9).

FT CONFLICT 116 116 MISSING (IN REF. 9).
 FT CONFLICT 134 136 SDD -> BBS (IN REF. 9).
 SQ SEQUENCE 217 AA; 25020 MW; 235B0DC7A713F431 CRC64;

Query Match 47.8%; Score 381; DB 1; Length 217;
 Best Local Similarity 82.0%; Pred. No. 1.8e-30;
 Matches 73; Conservative 8; Mismatches 8; Indels 0; Gaps 0;

QY 4 TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPTPS 63
 |:|||||:||||:|||| | ||| | ||||| | |||:||||| : ||| ||:|||||
 Db 29 TVPLSRLFDHAMLQAHLRAHQLAIDTYQEFEEYIPKDQKYSFLHDSQTSFCFSDSIPTPS 88
 QY 64 NREETQQKSNLELLLRISLLLIQSWLEPVQ 92
 | |||||:|||||:|||||:
 Db 89 NMEETQQKSNLELLLRISLLLIQSWLEPVR 117

RESULT 10

SOMA_MESAU

ID SOMA_MESAU STANDARD; PRT; 216 AA.
 AC P37886;
 DT 01-OCT-1994 (Rel. 30, Created)
 DT 01-OCT-1994 (Rel. 30, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Somatotropin precursor (Growth hormone).
 GN GH1 OR GH.
 OS Mesocricetus auratus (Golden hamster).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
 OC Mesocricetus.
 OX NCBI_TaxID=10036;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=92063850; PubMed=1954881;
 RA Southard J.N., Sanchez-Jimenez F., Campbell G.T., Talamantes F.;
 RT "Sequence and expression of hamster prolactin and growth hormone
 RT messenger RNAs."
 RL Endocrinology 129:2965-2971(1991).
 CC -!- FUNCTION: Plays an important role in growth control. Its major
 CC role in stimulating body growth is to stimulate the liver and
 CC other tissues to secrete IGF-1. It stimulates both the
 CC differentiation and proliferation of myoblasts. It also stimulates
 CC amino acid uptake and protein synthesis in muscle and other
 CC tissues.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
 CC -----
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 CC or send an email to license@isb-sib.ch).
 CC -----
 DR EMBL; S66299; AAB20368.1; -.
 DR PIR; B49159; B49159.

DR HSSP; P01246; 1BST.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Pituitary; Signal.
 FT SIGNAL 1 26 BY SIMILARITY.
 FT CHAIN 27 216 SOMATOTROPIN.
 FT DISULFID 78 189 BY SIMILARITY.
 FT DISULFID 206 214 BY SIMILARITY.
 SQ SEQUENCE 216 AA; 24690 MW; 3B69CE32AB6F1166 CRC64;

Query Match 39.0%; Score 310.5; DB 1; Length 216;
 Best Local Similarity 67.0%; Pred. No. 1.7e-23;
 Matches 61; Conservative 13; Mismatches 16; Indels 1; Gaps 1;

QY 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 || :||| || ||:|||| ||||| |||:|||| ||||: |:|| :|| ||: |||:||
 Db 27 FPAMPLSSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYIS-IQNAQTAFCFSETIPA 85
 QY 62 PSNREETQOKSNLELLRLISLLLIQSWLEPVQ 92
 |: :|| ||:|:|||| ||||| ||||| ||||
 Db 86 PTGKEEAQQRSDMELLRFSLLLIQSWLGPVQ 116

RESULT 11 SOMA_BALBO

ID SOMA_BALBO STANDARD; PRT; 190 AA.
 AC P33092;
 DT 01-OCT-1993 (Rel. 27, Created)
 DT 01-OCT-1993 (Rel. 27, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Somatotropin (Growth hormone).
 GN GH1.
 OS Balaenoptera borealis (Sei whale).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti;
 OC Balaenopteridae; Balaenoptera.
 OX NCBI_TaxID=9768;
 RN [1]
 RP SEQUENCE.
 RX MEDLINE=83000569; PubMed=7115813;
 RA Yudaev N.A., Pankov Y.A., Bulatov A.A., Osipova T.A.;
 RT "Amino acid sequence of seiwhale somatotropin.";
 RL Biokhimiia 47:1059-1069(1982).
 RN [2]
 RP PRELIMINARY PARTIAL SEQUENCE.
 RA Osipova T.A., Bulatov A.A., Pankov Y.A.;
 RT "Structural studies of tryptic peptides from large cyanogen bromide
 RT fragments of sei whale (Balaenoptera borealis) somatotropin.";
 RL Bioorg. Khim. 4:1589-1599(1978).
 CC -!- FUNCTION: Plays an important role in growth control. Its major
 CC role in stimulating body growth is to stimulate the liver and
 CC other tissues to secrete IGF-1. It stimulates both the
 CC differentiation and proliferation of myoblasts. It also stimulates
 CC amino acid uptake and protein synthesis in muscle and other

CC tissues.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
 DR PIR; JN0387; JN0387.
 DR PIR; PN0140; PN0140.
 DR HSSP; P01241; 1AXI.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Pituitary.
 FT DISULFID 52 163 BY SIMILARITY.
 FT DISULFID 180 188 BY SIMILARITY.
 SQ SEQUENCE 190 AA; 21835 MW; 09FBFF6DB14A75D6 CRC64;

Query Match 38.6%; Score 307.5; DB 1; Length 190;
 Best Local Similarity 67.0%; Pred. No. 2.8e-23;
 Matches 61; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

Qy 2 FPTIPLSRFLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 || :||| || ||:||| ||:|| |||:||| ||||: |:| |||| |:| ||| |||
 Db 1 FPAMPLSSLFANAVLRAQHLHELAAADTYKEFERAYIPEGQRY-FLQNAQSTGCFSEVIPT 59
 Qy 62 PSNREETQQKSNLELLLRISLLLIQSWLEPVQ 92
 |:|::| ||:|::| |||| ||||| ||||| ||||
 Db 60 PANKDEAQQRSDVELLRFSLLLIQSWLGPVQ 90

RESULT 12

SOMA_HORSE

ID SOMA_HORSE STANDARD; PRT; 216 AA.
 AC P01245;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 01-NOV-1995 (Rel. 32, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Somatotropin precursor (Growth hormone).
 GN GH1.
 OS Equus caballus (Horse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
 OX NCBI_TaxID=9796;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Pituitary;
 RX MEDLINE=94266171; PubMed=8206392;
 RA Ascacio-Martinez J.A., Barrera-Saldana H.A.;
 RT "Sequence of a cDNA encoding horse growth hormone.";
 RL Gene 143:299-300(1994).
 RN [2]
 RP SEQUENCE OF 27-216.
 RX MEDLINE=77005410; PubMed=965151;
 RA Zakin M.M., Poskus E., Langton A.A., Ferrara P., Santome J.A.,
 RA Dellacha J.M., Paladini A.C.;
 RT "Primary structure of equine growth hormone.";
 RL Int. J. Pept. Protein Res. 8:435-444(1976).
 RN [3]

RP PRELIMINARY SEQUENCE OF 27-216.
RX MEDLINE=74020362; PubMed=4747849;
RA Zakin M.M., Poskus E., Dellacha J.M., Paladini A.C., Santome J.A.;
RT "The amino acid sequence of equine growth hormone.";
RL FEBS Lett. 34:353-355(1973).
RN [4]
RP SEQUENCE OF 68-95 AND 183-216.
RA Zakin M.M., Poskus E., Dellacha J.M., Paladini A.C., Santome J.A.;
RT "Amino acid sequences around the cystine residues in equine growth
RT hormone.";
RL FEBS Lett. 25:77-82(1972).
RN [5]
RP SEQUENCE OF 202-216.
RX MEDLINE=68368390; PubMed=4876100;
RA Oliver L., Hartree A.S.;
RT "Amino acid sequences around the cystine residues in horse growth
RT hormone.";
RL Biochem. J. 109:19-24(1968).
CC -!- FUNCTION: Plays an important role in growth control. Its major
CC role in stimulating body growth is to stimulate the liver and
CC other tissues to secrete IGF-1. It stimulates both the
CC differentiation and proliferation of myoblasts. It also stimulates
CC amino acid uptake and protein synthesis in muscle and other
CC tissues.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC -----
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CC -----
DR EMBL; U02929; AAA21027.1; -.
DR HSSP; P01246; 1BST.
DR InterPro; IPR001400; Somatotropin.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 26
FT CHAIN 27 216 SOMATOTROPIN.
FT DISULFID 78 189
FT DISULFID 206 214
SQ SEQUENCE 216 AA; 24423 MW; 37AB3173834D11AC CRC64;

Query Match 38.5%; Score 306.5; DB 1; Length 216;
Best Local Similarity 65.2%; Pred. No. 4.1e-23;
Matches 60; Conservative 14; Mismatches 17; Indels 1; Gaps 1;

QY 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSES IPT 61
|| :||| || ||:||| |||| |||:||| ||||: |:| | :| | : |||:|
Db 27 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYIS-IQNAQA AFCFSETIPA 85

Qy 62 PSNREETQQKSNLELLRISLLLIQSWLEPVQL 93
 | : : : | | : | : : | | | | | | | | | | | |
 Db 86 PTGKDEAQQQRSDMELLRFSLLIQSWLGPVQL 117

RESULT 13

SOMA_GALSE

ID SOMA_GALSE STANDARD; PRT; 217 AA.
 AC Q9GKA1;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Somatotropin precursor (Growth hormone).
 GN GH1.
 OS Galago senegalensis (Northern lesser bushbaby).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Strepsirhini; Galagonidae; Galago.
 OX NCBI_TaxID=9465;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX PubMed=11141192;
 RA Adkins R.M., Nekrutenko A., Li W.-H.;
 RT "Bushbaby growth hormone is much more similar to nonprimate growth
 RT hormones than to rhesus monkey and human growth hormones.";
 RL Mol. Biol. Evol. 18:55-61(2001).
 CC -!- FUNCTION: Plays an important role in growth control. Its major
 CC role in stimulating body growth is to stimulate the liver and
 CC other tissues to secrete IGF-1. It stimulates both the
 CC differentiation and proliferation of myoblasts. It also stimulates
 CC amino acid uptake and protein synthesis in muscle and other
 CC tissues.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
 CC -----
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 CC -----
 DR EMBL; AF292938; AAG44952.1; -.
 DR HSSP; P01246; 1BST.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Pituitary; Signal.
 FT SIGNAL 1 26 BY SIMILARITY.
 FT CHAIN 27 217 SOMATOTROPIN.
 FT DISULFID 79 190 BY SIMILARITY.
 FT DISULFID 207 215 BY SIMILARITY.
 SQ SEQUENCE 217 AA; 24481 MW; 2FB61CD31136F005 CRC64;

Query Match 38.5%; Score 306.5; DB 1; Length 217;

Best Local Similarity 65.2%; Pred. No. 4.1e-23;
Matches 60; Conservative 14; Mismatches 17; Indels 1; Gaps 1;

```
Qy      2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
      || :||| || ||:|||| ||||| |||:|||| ||||: |:|| :|| | : |||:||
Db      28 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYIS-IQNTQAAFCFSETIPA 86

Qy      62 PSNREETQQKSNLELLLRISLLLIQSWLEPVQL 93
      |: ::| ||:|::|||| ||||| |||||
Db      87 PTGKDEAQQRSDMELLRFSLLLIQSWLGPVQL 118
```

RESULT 14

SOMA_NYCPY

```
ID  SOMA_NYCPY      STANDARD;      PRT;      217 AA.
AC  Q9GMB2;
DT  28-FEB-2003 (Rel. 41, Created)
DT  28-FEB-2003 (Rel. 41, Last sequence update)
DT  28-FEB-2003 (Rel. 41, Last annotation update)
DE  Somatotropin precursor (Growth hormone).
GN  GH1.
OS  Nycticebus pygmaeus (Pygmy slow loris).
OC  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC  Mammalia; Eutheria; Primates; Strepsirhini; Loridae; Nycticebus.
OX  NCBI_TaxID=101278;
RN  [1]
RP  SEQUENCE FROM N.A.
RC  TISSUE=Liver;
RA  Wallis O.C., Zhang Y.P., Wallis M.;
RT  "Cloning and characterisation of the gene encoding slow loris growth
RT  hormone.";
RL  Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.
CC  -!- FUNCTION: Plays an important role in growth control. Its major
CC      role in stimulating body growth is to stimulate the liver and
CC      other tissues to secrete IGF-1. It stimulates both the
CC      differentiation and proliferation of myoblasts. It also stimulates
CC      amino acid uptake and protein synthesis in muscle and other
CC      tissues.
CC  -!- SUBCELLULAR LOCATION: Secreted.
CC  -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
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CC  -----
DR  EMBL; AJ297562; CAC03504.1; -.
DR  HSSP; P01246; 1BST.
DR  InterPro; IPR001400; Somatotropin.
DR  Pfam; PF00103; hormone; 1.
DR  PRINTS; PR00836; SOMATOTROPIN.
DR  PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR  PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW  Hormone; Pituitary; Signal.
```

FT SIGNAL 1 27 BY SIMILARITY.
 FT CHAIN 28 217 SOMATOTROPIN.
 FT DISULFID 79 190 BY SIMILARITY.
 FT DISULFID 207 215 BY SIMILARITY.
 SQ SEQUENCE 217 AA; 24395 MW; 7FE90D77E59085F6 CRC64;

Query Match 38.5%; Score 306.5; DB 1; Length 217;
 Best Local Similarity 65.2%; Pred. No. 4.1e-23;
 Matches 60; Conservative 14; Mismatches 17; Indels 1; Gaps 1;

Qy 2 FPTIPLSRFLDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSESIPT 61
 || :||| || ||:||| ||||| |||:||| ||||: |:|| :|| | : |||:|
 Db 28 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYSIQNAQA AFCFSETIPA 86
 Qy 62 PSNREETQQKSNLELLRLISLLLIQSWLEPVQL 93
 |: ::| ||:|::||| ||||| ||||| |||||
 Db 87 PTGKDEAQQRSDMELLRFSLLIQSWLGPVQL 118

RESULT 15

SOMA_MOUSE

ID SOMA_MOUSE STANDARD; PRT; 216 AA.
 AC P06880;
 DT 01-JAN-1988 (Rel. 06, Created)
 DT 01-JAN-1988 (Rel. 06, Last sequence update)
 DT 15-MAR-2004 (Rel. 43, Last annotation update)
 DE Somatotropin precursor (Growth hormone).
 GN GH1 OR GH.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=85261358; PubMed=2991252;
 RA Linzer D.I.H., Talamantes F.;
 RT "Nucleotide sequence of mouse prolactin and growth hormone mRNAs and
 RT expression of these mRNAs during pregnancy."
 RL J. Biol. Chem. 260:9574-9579(1985).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC STRAIN=FZTDU; TISSUE=Liver;
 RX MEDLINE=96194803; PubMed=8647448;
 RA Das P., Meyer L., Seyfert H.-M., Brockmann G., Schwerin M.;
 RT "Structure of the growth hormone-encoding gene and its promoter in
 RT mice."
 RL Gene 169:209-213(1996).
 RN [3]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Pituitary;
 RX MEDLINE=22388257; PubMed=12477932;
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
 RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
 RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
 RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
 RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
 RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
 RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
 RA Fahey J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,
 RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
 RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
 RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
 RT "Generation and initial analysis of more than 15,000 full-length
 RT human and mouse cDNA sequences.";
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).

CC -!- FUNCTION: Plays an important role in growth control. Its major
 CC role in stimulating body growth is to stimulate the liver and
 CC other tissues to secrete IGF-1. It stimulates both the
 CC differentiation and proliferation of myoblasts. It also stimulates
 CC amino acid uptake and protein synthesis in muscle and other
 CC tissues.

CC -!- SUBCELLULAR LOCATION: Secreted.

CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.

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DR EMBL; X02891; CAA26650.1; -.
 DR EMBL; Z46663; CAA86658.1; -.
 DR EMBL; BC061157; AAH61157.1; -.
 DR PIR; B23911; STMS.
 DR HSSP; P01246; 1BST.
 DR MGD; MGI:95707; Gh.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Pituitary; Signal.
 FT SIGNAL 1 26 BY SIMILARITY.
 FT CHAIN 27 216 SOMATOTROPIN.
 FT DISULFID 78 189 BY SIMILARITY.
 FT DISULFID 206 214 BY SIMILARITY.
 SQ SEQUENCE 216 AA; 24716 MW; 98666A3AE25D65FC CRC64;

Query Match 38.2%; Score 304.5; DB 1; Length 216;
 Best Local Similarity 64.8%; Pred. No. 6.5e-23;
 Matches 59; Conservative 14; Mismatches 17; Indels 1; Gaps 1;

QY 2 FPTIPLSRLFDNAMLRAHRLHQLAFDITYQEFEEAYIPKEQKYSFLQNPQTSLSFSES IPT 61
 || :||| || ||:|||| ||||| |||:|||| ||||: |:|| :|| | : |||:||
 Db 27 FPAMPLSSLSFNAVLRAQHLHQLAADTYKEFERAYIPEGQRYIS-IQNAQA AFCFSETIPA 85

Qy 62 PSNREETQOKSNLELLRISLLLIQSWLEPVQ 92
|: :|| ||: :: |||| ||||| |||
Db 86 PTGKEEAQQRTDMELLRFSLLLIQSWLGPVQ 116

Search completed: July 15, 2004, 16:36:26
Job time : 10.3545 secs